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“

Pip wants to do more than just inspire you to live your best life. We want to lead by example, practise what we preach and live by the ethics of earth care, people care and fair share. And although permaculture is a concept created 40-odd years ago, these ideas aren't new. Indigenous people all around the world have been living like this for tens of thousands of years.

Pip acknowledges the traditional custodians of this land; past, present and emerging. Created on the lands of the Yuin Nation, Pip respects the great wealth of knowledge and rich tradition which has cared for this country for millennia. We invite First Nations People to share their knowledge within Pip, so that we can all have a deeper connection to country and learn to care for her in a more respectful way.

We make considered choices about all aspects of our business, not just our great content. From the paper we choose to print on, to the energy we consume, right down to the companies we choose to partner with.

The global challenges we're currently facing mean it's never been more important to inspire positive and community-driven change.

And that's our promise to you.

”

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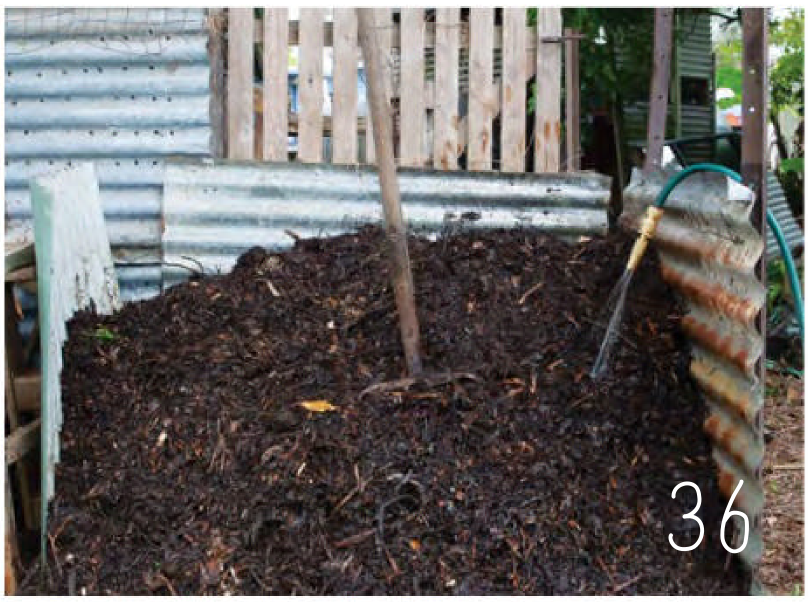

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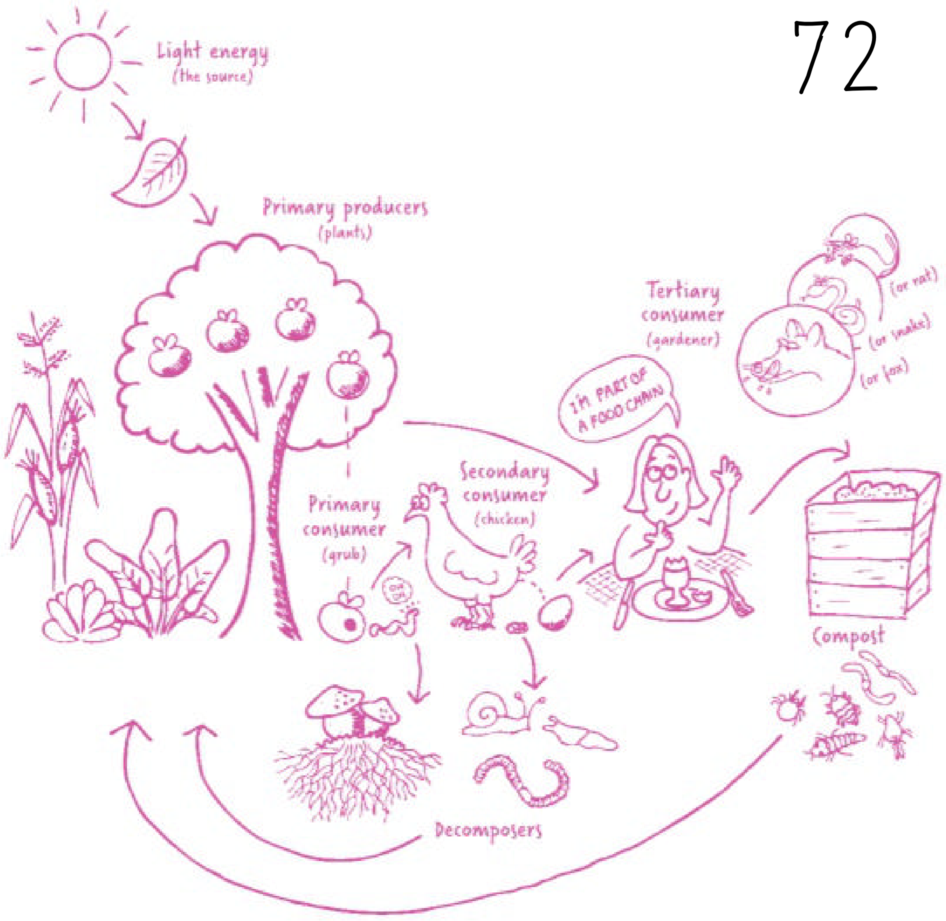
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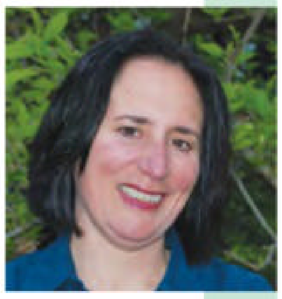
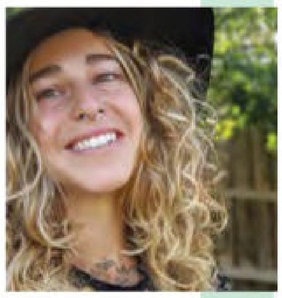


Maria has combined her teaching background with her many years in retail horticulture to be the founder of My Green Garden, her small business which has delivered hundreds of presentations and hands-on workshops on down-to-earth topics since 2007. Now she juggles My Green Garden commitments with a regular job back in school education, all while trying to maintain a huge productive garden, her beloved chooks and her compulsion to preserve anything that stands still long enough!

TAJ SCICLUNA



Taj specialises in herbalism practices for those with neurodivergence and anxiety, focusing on the systemic links between the nervous, digestive and immune systems. She is an artist who fuses her love of herbalism, foraging, writing, cooking, ecosystem health, personal health and education into a cohesive offering. Her business, The Perma Pixie, is a platform for creativity, a place to weave the romantic wonder of the botanical into something tangible to share with the world. Taj is currently looking for a publisher for her first book, *The Herbal Homestead.*

ROSEMARY 'ROWE' MORROW

Rowe trained in agricultural science at Sydney University, rural sociology at the Sorbonne in Paris, development at Reading UK and horticulture at TAFE. However, after spending time in Africa, she realised there needed to be a better alternative to conventional agricultural practices. She found this in the ethics and integrated applied science of permaculture, and has been teaching permaculture ever since. She is the author of numerous publications including her latest, the *Earth Restorer's Guide to Permaculture.*

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Pip is produced on the lands of the Thawa people of the Yuin Nation. We acknowledge the Traditional Custodians of this land and thank them for their care of this beautiful place and its diverse ecosystems. We acknowledge First Nations people have been caring for this country for thousands of years and we humbly seek to learn from the vast amount of knowledge that has been handed down from generation to generation.

EDITORIAL

> Allow yourself to take a moment to sit and read. And breathe

Sit and breathe. I feel like it is a time where we all need to stop and take the time to sit and breathe occasionally. When did life get so hectic for everyone? Why are we all so busy?

Exhale.

I hope this issue encourages you to allow yourself to take a moment to sit – preferably with a beverage of your choice – and read and breathe. To take a moment to find some inspiration from the knowledge and experience of others, and to read stories of extraordinary actions of everyday folk who are making a difference in the world, in their own small way in their own neck of the woods.

We don't all have to be out there conquering the world and solving all of its problems all at once. Sometimes just sharing some excess homegrown produce with others in your community (*Give and Take*, page 58) can make a big difference in someone else's life, or doing your bit to preserve the little ecosystem that surrounds you (*Networks in Ecosystems*, page 72).

Or maybe it's the things we don't do? I love Sarah Aitken's interview with Jane Hilliard and her take on enoughness (*The New Plenty*, page 52). Enoughness requires no extra energy, finances or action. It's the art of accepting what we have as enough, or reassessing what we define as enough, and that on its own can do so much towards helping the planet.

I know most of us don't have time to take on all or even some of the projects, ideas and inspiring feats that we feature in these pages, but hopefully you can find the time to sit and read about them, and let them sit with you. Then when you do have time, you have some great ideas about how to fill it.

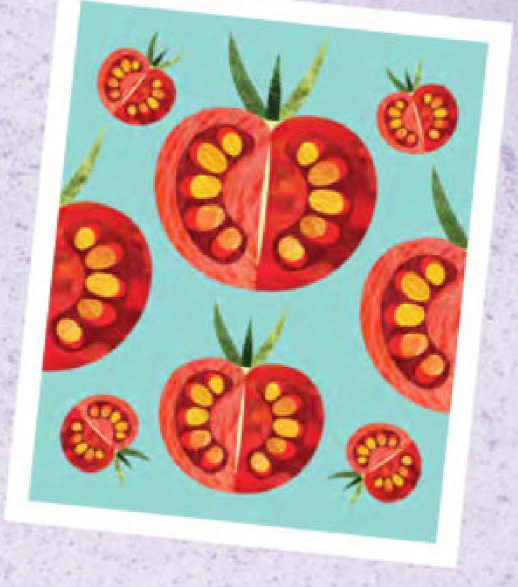
Thank you for taking the time to read Pip. I hope it brings you joy and love.

Robyn

Cover artist

IRINA VISKANTA

Irina is a digital illustrator who loves experimenting with various styles, combining different textures and forms. Her unique works aim to evoke pleasant emotions in a viewer by showing the beauty of both the natural and animal worlds. Irina was born and raised in Latvia, however she's currently living and working in the United Kingdom.



HUMAN HUMUS

In January this year, New York became the sixth American state to legalise human composting as a sustainable alternative to burial or cremation. Known as Natural Organic Reduction (NOR), bodies are laid in a mixture of organic material such as straw and sawdust and the microbes already in the body do the rest. The process takes between 45–60 days and the family of the deceased is given the resulting soil to do with what they please. While it's currently not a legal practice in Australia, Micah Truman, who's the CEO of American NOR facility Return Home, told ABC Radio National's Breakfast program he 'just hosted a man from Australia at our facility two days ago, who is super keen to do it in Australia.' Stay tuned!

SUSTAINABLE SHINDIGS

Victoria is playing host to two fabulous festivals in the coming months, the Lost Trades Fair in Bendigo over 11–12 March and the Off-Grid Living Festival in Eldorado over 15–16 April. Featuring skilled artisans in lost arts, rare trades and heritage crafts, the Lost Trades Fair is a must for anyone with an eye for fine craftsmanship. The Off-Grid Living Festival has exhibitors representing 10 fundamental topics of living off-grid, from energy and technology through to bushcraft and survival skills. Tickets to both events are available via www.trybooking.com.

SEA THE WEED

In partnership with Aussie filmmaker Damon Gameau, the Australian Indigenous Mentoring Experience (AIME) organisation is selling fully compostable hoodies made from seaweed to raise money to reforest crayweed populations on 23 Sydney beaches. With a price tag of $500, it's not cheap, but $250 will go directly to the project, with the remaining money covering manufacturing and shipping. Get yours at shop.aimementoring.com.

THIS
HOODIE
GROWS
UNDERWATER
FORESTS

> “THE COST OF ANYTHING IS THE AMOUNT OF LIFE WE ARE WILLING TO EXCHANGE FOR IT”

Jane Hilliard is a Tasmanian-based building designer championing the notion of ‘enoughness’ – a philosophy that's hard to argue with. Read our in-depth interview with her starting page 52.

PIP TIP!

With fallen leaves in abundance, autumn is the time to start think about making a batch of leaf mould, a great resource when building healthy soils. Because of the time it takes for leaves to break down into a friable usable product, many opt to use the leaves as carbon in the compost instead. But by mowing over your leaves a few times to make them smaller, you will reduce the breaking-down time considerably, and kickstart the fungal process off at the same time.

If composting is more your thing, head to our Composting 101 feature on page 36 to find out which system you should be using at your place.

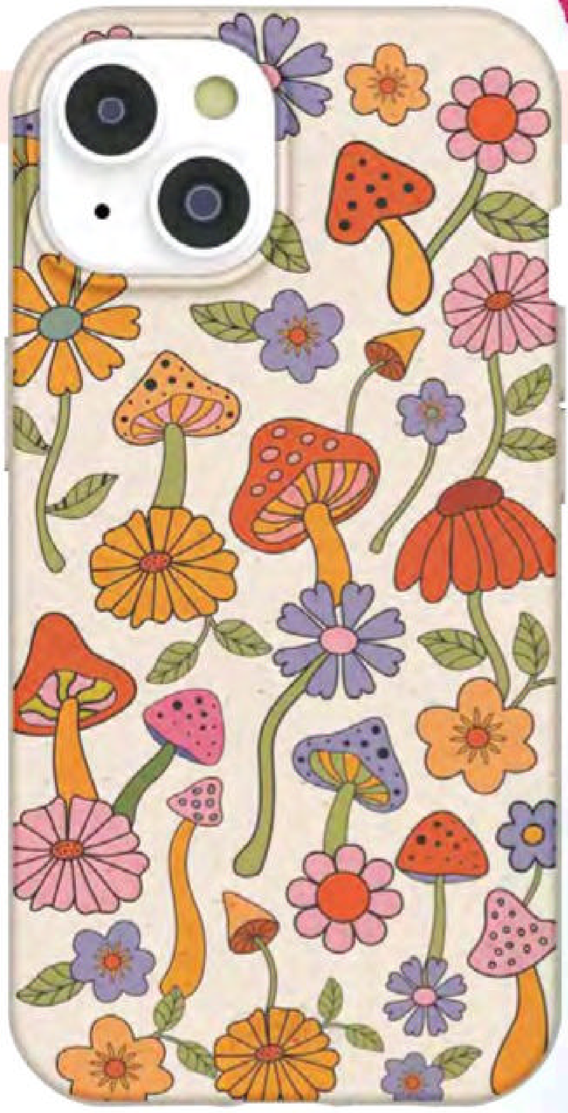
TELL US!

We'd love to hear what you want to read, listen and watch more of.
Let us know how we can inspire you by emailing editorial@pipmagazine.com.au.
And if you don't like something, we want to know about that, too!

Mexican Sole
HUARACHES

An Australian company founded by a couple with Mexican heritage, Mexican Sole shoes sources its huaraches from a family-run producer in Mexico. Handmade by experienced weavers using sustainably sourced leather, each shoe is created using a single strand of leather that's been woven into the sole, making them durable and long lasting. The colours are achieved using vegetable dyes and the process uses a 200-year-old method which takes 28 days. They're available in a range of styles in both men's and women's sizes.

From $149.99 **www.mexicansole.com.au**



MEXICAN SOLE
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MEXICAN SOLE
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Pela
PHONE CASE

American company Pela claims to have created the world's first compostable and biodegradable phone case. Made using the straw-like substance left after flax is harvested, as well as biopolymers and other waste materials, Pela says production of its cases produce 30 percent less carbon emissions, uses 34 percent less water and produces 80 percent less waste.

From $62 **www.pelacase.com**

Cinderella
INCINERATION TOILETS

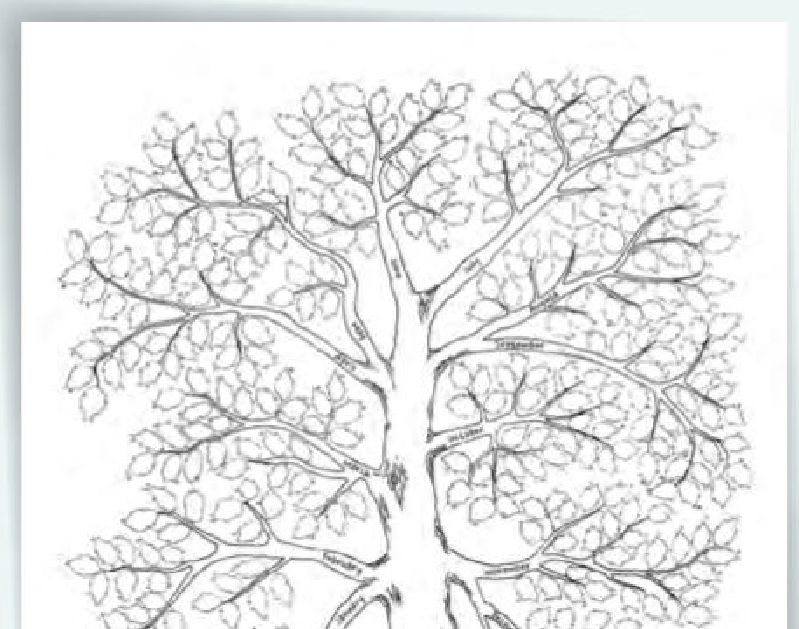
Norwegian company Cinderella has picked up a swag of sustainability gongs for its range of waterless incineration toilets. Perfect for off-grid or tiny homes, the Freedom model requires no external tanks, water supply or drainage. Using a combination of 12-volt power and LPG, it incinerates human waste at high temperatures and Cinderella claims four people using the loo for one week will only produce one teacup of odourless ash.

$6990 **www.scandinavianecosolutions.com.au**

Weather Tree
WEATHER POSTER

Featuring 365 leaves to be coloured in to reflect each day of the year's weather, the Weather Tree poster is a way to connect with your environment while keeping a visual record of the weather over the course of 12 months. Measuring 64 x 90 cm, the poster fits an A1 frame, is printed in regional Australia and on 100 percent recycled paper.

$24.00 **www.weathertree.com.au**



OPINEL
INOX
N°08
OPINEL
SAVOIE-FRANCE
Weather Tree
Key

Opinel
MUSHROOM KNIFE

Opinel's folding mushroom knife uses an 8 cm blade with a serrated back to assist with cutting, scraping and cleaning your foraged mushrooms. The end of the handle features a brush of natural bristles for dusting the picked mushrooms or for clearing the space around the mushroom to achieve a clean cut. The handle is beechwood timber and the knife uses Opinel's virobloc safety ring to keep it in when opened or closed.

$44.95 **www.zenimports.com.au**

INTERNATIONAL PROJECTS

WORDS BY MORAG GAMBLE, WWW.PERMACULTUREEDUCATIONINSTITUTE.ORG
PHOTOS COURTESY OF THE PROJECTS

TAP O'NOTH FOREST GARDEN FARM

taponothpermaculture.wordpress.com

Tap O'Noth farm is a food forest, a permaculture education site and homestead situated on the side of Tap O'Noth hill in Aberdeenshire, Scotland. The eight-acre farm was started in 2012 by James Reid and Rosa Bevan with the aim of showing how to create a cold-climate permaculture homestead.

James and Rosa have created a farm that functions like a forest ecosystem and share this with as many people as possible, while living a simple ecological life. They host permaculture education programs, run a half-acre agroforestry CSA (Community Supported Agriculture) market garden, invite people to stay at their their restored shepherd's hut and are regenerating the woodlands and wetlands.

James and Rosa's ecological vegetable box scheme feeds 50 households in their local area. They keep dairy goats and sheep to graze as well as geese and chickens to sell eggs alongside their organically grown vegies. Tap Farm hosts regular visitors, volunteers and students.

If you want to learn more about what they are doing and how they are doing it, subscribe to their *Tap O'Noth Permaculture – a Forest Garden Farm* YouTube channel.

LANDMATTERS

landmatterscoop.org

Home to 10 adults and eight kids, Landmatters is an example of affordable, cooperative, rural permaculture living. Nestled on a 42-acre site just outside of Totnes, England's thriving hub of alternative living and thinking, Landmatters started in 2002 as a way to live more lightly on the planet and provide a place of inspiration by hosting courses and events.

The residents are learning by doing; reskilling themselves in off-grid living, regeneration and consensus decision-making. As well as their small hand-built homes and permaculture gardens, Landmatters looks after 17 acres of ancient woodland and 22 acres of pasture and hedgerows. As an aside, 20-year-old resident Kuki Warbuton was awarded one of 2022's Youth in Permaculture prizes because of the permaculture-inspired music she and her brother (pictured) produce in a solar-powered studio built from reclaimed materials. The community welcomes people to courses, summer volunteer programs, monthly tours or overnight stays in one of their beautiful yurts.

SUDERBYN ECOVILLAGE

www.suderbyn.se

Suderbyn is an inspiring permaculture ecovillage on Gotland, Sweden's largest island in the Baltic Sea, 350 km off the coast of Russia. Founded in 2008 as a people-care cooperative, Suderbyn is a place for individuals to live with nature and permaculture principles, and to work for a resilient society. All 20 international people currently calling Suderbyn home are volunteers, all are learning and working together with a shared dedication. They're experimenting with and sharing alternative ways of living.

From these cooperative roots, members are collaborating, educating and acting locally and regionally. Suderbyn is home to the non-profit organisation Relearn and it is through this the ecovillagers offer education and projects with a particular focus on environmental resilience and social justice in the region, particularly with youth. With funding, and in partnership with universities and regenerative organisations, Suderbyn Ecovillage offers programs such as developing education models for ecovillages. Suderbyn is the Baltic Ecovillage Network hub, which is part of the Global Ecovillage Network, and it hosts long- and short-term visitors and volunteers.

EARTH PASSENGERS

earthpassengers.org

Earth Passengers is a non-profit set up by Chiang Hui-i and her husband Peter Morehead almost two decades ago and, as the leading permaculture centre in Taiwan, will be hosting the international permaculture conference (IPC15) at the end of 2023.

In 2008 they began transforming a worn-out rice paddy into a one-hectare education centre in the south-eastern part of the country. Using permaculture design they have turned it into a thriving garden, food forest and active classroom. Earth Passengers hosts permaculture design, appropriate technology and self-sufficiency education programs and internships.

The host of the first-ever permaculture course in Taiwan with Australian teacher Robyn Francis in 2008, Earth Passengers has been hosting many courses and programs since, including a special program with indigenous Taiwanese from the Rukai tribe.

Chiang and Peter hope to share permaculture more widely in the Chinese-speaking world and Morag Gamble will collaborate on a range of design and teaching programs ahead of the November conference.

5 PLANTS IN YOUR PANTRY

WORDS & PHOTOS BY JULIE BENNETT

When it comes to sourcing seed for a green-manure crop, microgreen garnishes or to keep the kids entertained during the holidays, chances are you won't need to head to your local garden centre or crop swap to source viable seed. While it's always advisable to source fresh, open-pollinated seed in order to start off the crops you intend to eat, you'll be amazed what will germinate from the spices and other edibles you already have in your pantry.

When it comes to the edible seeds and legumes we use in cooking, many people believe in order for them to germinate, they need to be certified-organic, meaning they haven't been treated with chemicals or are in some way different to garden seeds. But that's not the case, as we found out after rifling through the pantry to see what would germinate. And the rates of germination were surprisingly high, making them perfect for a green-manure or cover crop to protect your soil between plantings.

Fennel Seeds

1

FENNEL SEEDS

The fennel seeds (*Foeniculum vulgare*) in your spice rack are generally a type of bulbing fennel, rather than the tall wild or bronze fennel varieties. You can add fennel seeds to your green-manure mix or sow them as you would other edibles. And because its date to maturity is about 90 days, there are plenty of uses for it in the kitchen when it's still young. As well as being a quick-germinating cover crop, you can harvest the young leaves to add a mild aniseed flavour to salads or tabouleh, or leave a few in to mature into a white above-ground bulb to harvest when ripe. You could leave one bulb in to go to seed to have fresh fennel seed to grow again or to use as a spice and replenish your pantry.

CHIA SEEDS

2

A member of the mint family, Chia (*Salvia hispanica*) is a fast-growing annual that produces a large amount of small edible seeds. The very young leaves are often harvested and used as a microgreen, while the shoots can be used in salads. Chia is a beneficial addition to any food-growing garden as it produces long blue flower spikes that pollinators will be attracted to.

High in Omega 3, chia seeds are a healthy addition to smoothies and popular as puddings as they need to be soaked in water to get the most nutritional benefits, but can also be used in dressings, homemade granola or sprinkled over salads. Unless you want 'volunteer' chia plants for years to come, remove flower spikes once they've finished to collect the seed.

Popping corn

3

POPPING CORN

As it's a maize and not a sweet corn, you won't be able to harvest the cobs of popping corn (*Zea mays everta*) to eat fresh, but may be the perfect way to introduce young kids to growing their own food. Corn is a very hungry crop, so it won't add a lot back to the soil, but cutting open a bag of store-bought popping corn and getting the kids to poke a handful of kernels into the soil might just start budding young gardeners off on their food-growing journey. Especially when they're eating their homegrown popcorn on movie night. After the ears have ripened on the plant, peel back the husks of the harvested cobs and hang inside to dry. The kernels need to be dried really well in order to get the best results when popping.

4

GREEN LENTILS

All lentils – not just green lentils – are an edible legume, which play an important role in successful crop rotation systems. Like most plants in the bean (*Fabaceae*) family, they're nitrogen fixers, which means they have the ability to draw nitrogen from the atmosphere and store it as white, fluffy nodules on their roots. If the plant is cut off at ground level, the nitrogen nodules are then made available to feed the following crop.

The young shoots are edible and make a nice addition to salads or as a pretty garnish, but if you want to harvest lentils, to either eat or save the seed, you need to allow the pod to dry on the plant first. Broadcast sow them with your green-manure mix, or plant as a standalone crop.

Green Lentils 12/12

Mustard Seeds

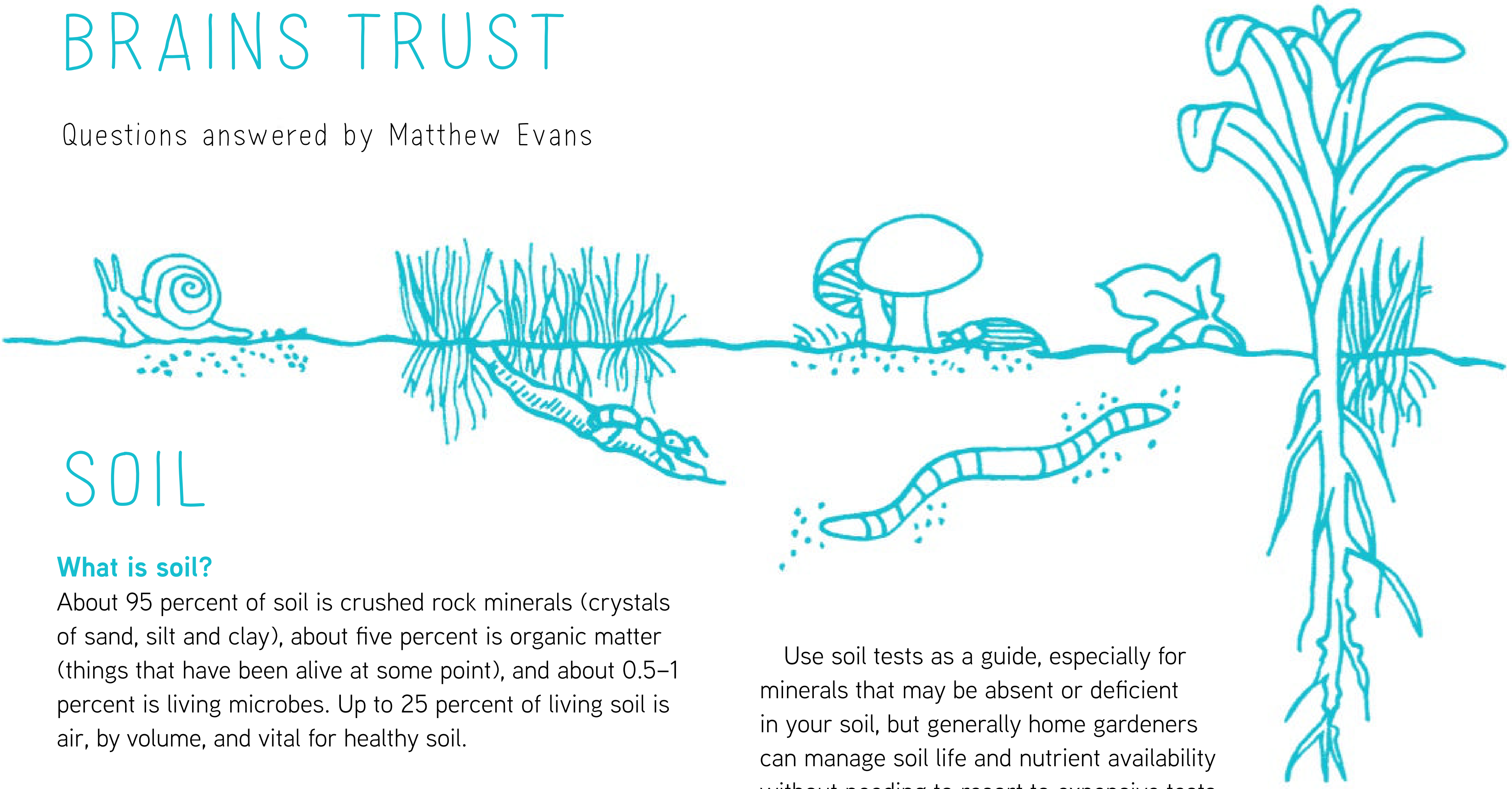
5

MUSTARD SEEDS

The large yellow mustard seeds you buy for use in the kitchen actually come from the white mustard plant (*Sinapis alba*). Mustards, like some other brassica species, are a biofumigant plant, which means they release certain compounds which inhibit soilborne pests and pathogens, but only when the plant begins to break down. This makes the mustard seeds in your pantry a great thing to incorporate into your crop-rotation system, either as a standalone cover crop which is cut and left to break down before flowering, or as an addition to your green-manure mix. Don't forget to allow a few plants to go to seed so you can harvest your own fresh yellow mustard seed.

BRAINS TRUST

Questions answered by Matthew Evans



SOIL

What is soil?

About 95 percent of soil is crushed rock minerals (crystals of sand, silt and clay), about five percent is organic matter (things that have been alive at some point), and about 0.5–1 percent is living microbes. Up to 25 percent of living soil is air, by volume, and vital for healthy soil.

How is soil made?

Lichens, fungi, worms and microbes can help break down rock, but most comes from other actions such as freezing and thawing, glaciers or gradual erosion. Organic matter comes from leaf matter and animals – so dead roots, leaves and the like, along with insects, microbes and so on.

Plants feed the underground ecosystem with sugars and other organic compounds, essentially pushing organic matter into the soil because they can construct carbohydrates through photosynthesis. Nature makes soil at a similar rate to it being lost, but humans have typically degraded soil faster than it is made.

What's the best thing I can do for my soil?

If you're in a place where it can dry out, water it. That's the most important thing in the first instance. Get something – anything – to grow, because that starts the biology happening and starts to store carbon. The next best thing you can do is to add carbon – mulch it and don't leave any bare earth. Adding compost is the best carbon, because it is pre-digested, ready for microbes to use, and it already has glycoproteins in it that give soil better structure. Compost also contains chemicals that enhance plant growth and help nurture the microbes in your soil. Adding biochar is rarely going to hurt either, though many suggest soaking it in compost tea first to inoculate it with microbes.

Should I get a soil test done?

Soil tests can tell you a bunch of things, like soil pH (a measure of acidity), the presence of certain minerals and the like. But soil tests don't give you a measure of exactly how available nutrients are to your plants because the microbes living in the soil are actually what make the nutrients available in a form that the plant can take up.

Use soil tests as a guide, especially for minerals that may be absent or deficient in your soil, but generally home gardeners can manage soil life and nutrient availability without needing to resort to expensive tests.

I've seen that you can purchase microbes to add to your soil. Is this a gimmick or do they actually work?

Adding living – they must be living – microbes to your soil can be helpful. But more importantly, because microbes are airborne, and probably already exist in small numbers in even poor soils, you have to create the conditions for them to thrive. Compost, broken-down manure and mulch can all create food for the microbes to rebound in numbers. Get that right and any microbes you already have, or do add, will also be able to thrive.

Everyone bangs on about how great soil is, but there are diseases in soils that will attack my crops if I don't rotate them – which is it?

Nature doesn't grow a monoculture, but humans do, even in our small home gardens. Pest species certainly do exist, and can be managed by rotating crops or planting multi-species beds.

You can also fumigate your soil by planting things such as mustard leaf, which act as a nice biosecurity option, while still keeping living roots in soil.

Not all soil life is wonderful, like botulism and legionnaire's disease, for example, but the vast, vast majority is benign or helpful. Aim for harmony and work with nature, not against it. Growing food in a functioning ecosystem is the goal. As growers, we manage the ecosystem to some extent, because it's different to an entirely wild or native ecosystem.

This is an edited extract from *Soil. The incredible story of what keeps the earth, and us, healthy.* By Matthew Evans (Murdoch Books 2021)

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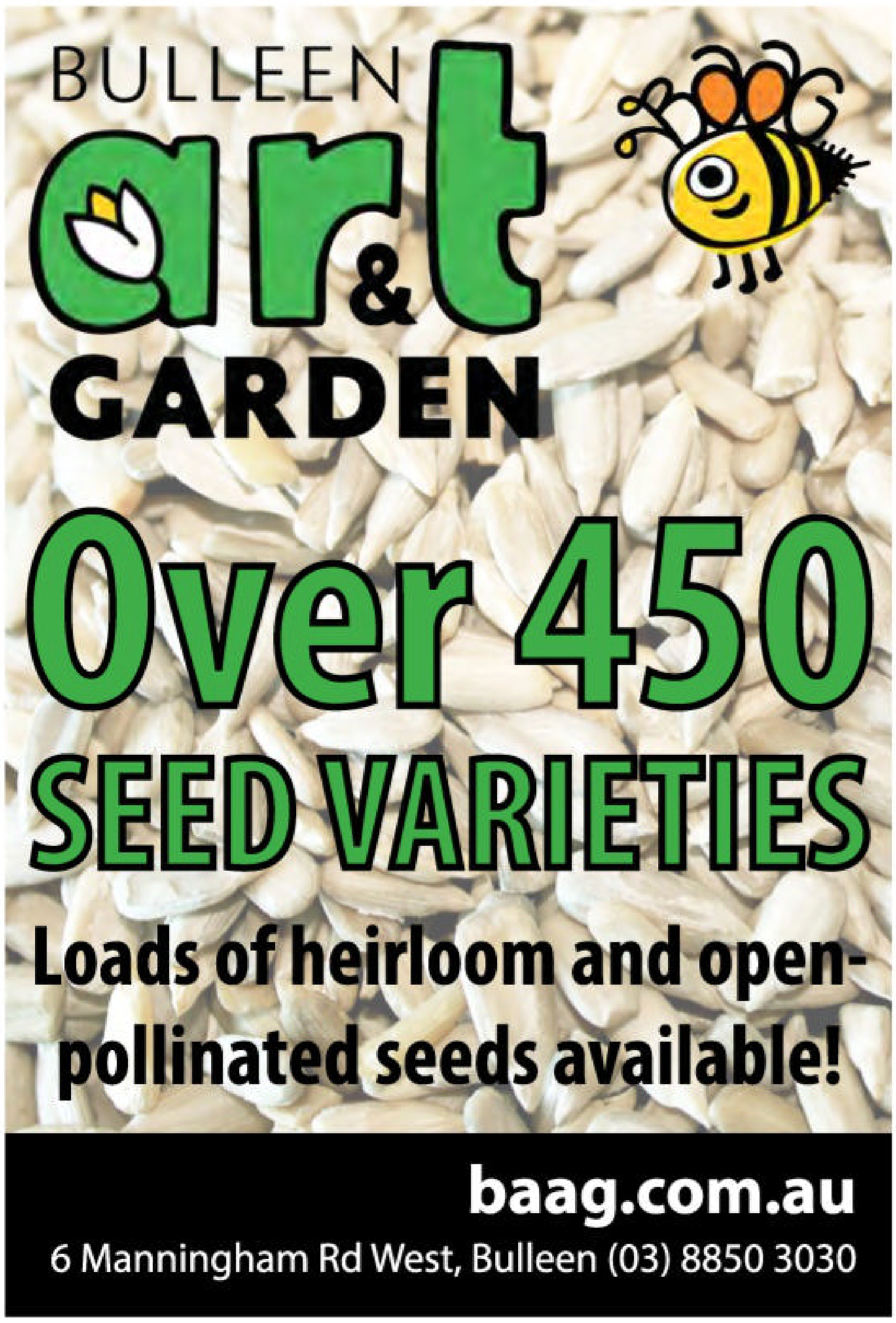
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LETTERS TO THE EDITOR

We'd love to receive your feedback, questions, ideas or to see if we've inspired you to embark on any projects. Email your letters and photos to editorial@pipmagazine.com.au

WRITE IN AND WIN!

Letter of the Issue will receive a copy of *Thrifty Gardening* by the collective wisdom of the Victorian Country Women's Association.

LETTER *of the* ISSUE

Downsizing

I was devastated when early this year I had to leave my rental of 17 years. I had built up a huge plant collection over that time that had become accustomed to its own funky little microclimate.

Due to overwhelm, and moving to a third-floor apartment with no lift, I gave away 95 percent of my plants. I honestly went into grief-mode as I mourned the loss of my beautiful garden I had built up over the years.

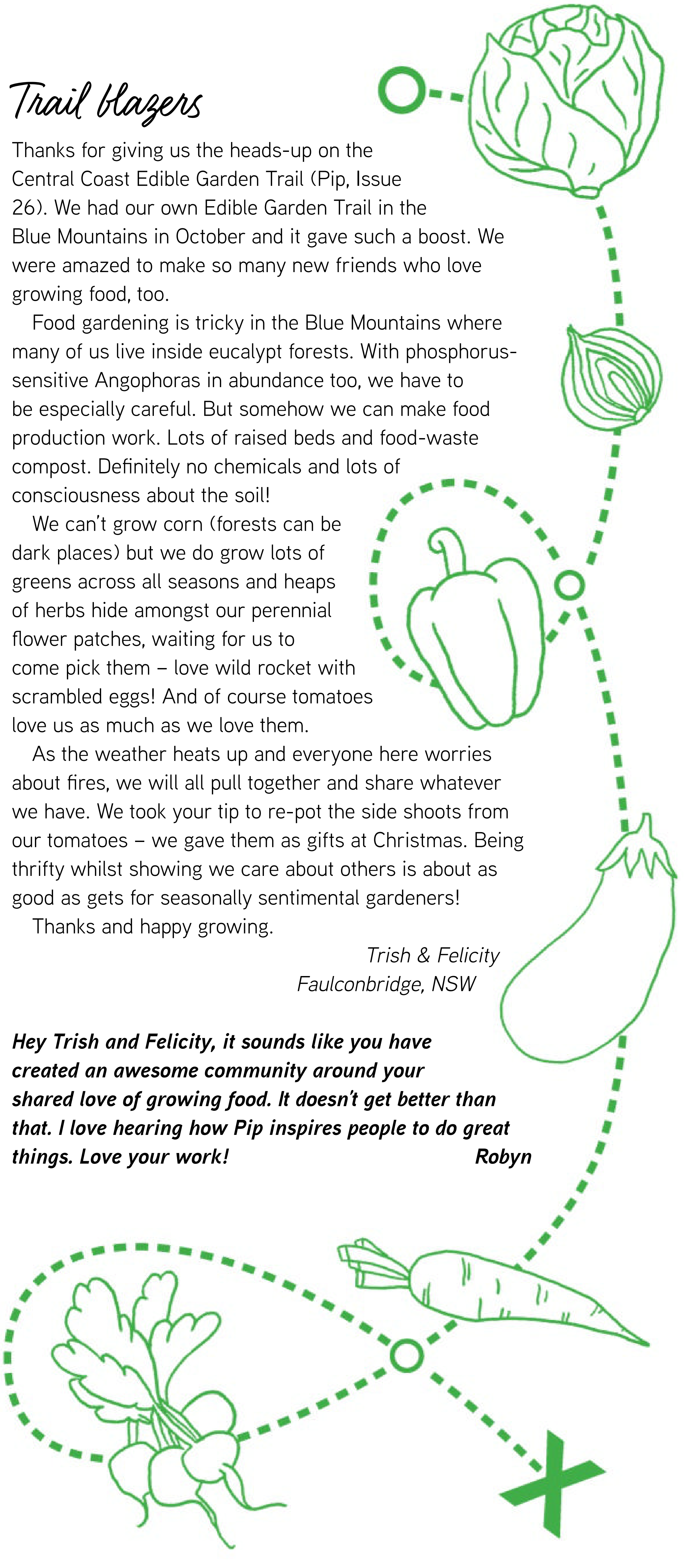
So I decided to start again. Start small. And as I now have abundant sunshine on my small new balcony (my last place was a dark rainforest!), I decided to try my hand at vegies – and lo and behold it's working.

I'm eating radishes, cos lettuce, pak choy, herbs and am waiting impatiently for the tomatoes, strawberries and peas. This tiny space is full of abundance and gives me so much joy. It's also helping heal my heart.

Here is a picture of two of the three little troughs I'm growing things in – I just need to set up a composting system then I'll be really on my way.

Vanessa Greay
Alexandria, NSW

I know how you feel, Vanessa. I experienced the same when renting and moving – your plants become your family. It sounds like you have an awesome little garden going now, and often the small spaces close to your living area do better as they are easier to maintain and keep an eye on. Robyn



Trail blazers

Thanks for giving us the heads-up on the Central Coast Edible Garden Trail (Pip, Issue 26). We had our own Edible Garden Trail in the Blue Mountains in October and it gave such a boost. We were amazed to make so many new friends who love growing food, too.

Food gardening is tricky in the Blue Mountains where many of us live inside eucalypt forests. With phosphorus-sensitive Angophoras in abundance too, we have to be especially careful. But somehow we can make food production work. Lots of raised beds and food-waste compost. Definitely no chemicals and lots of consciousness about the soil!

We can't grow corn (forests can be dark places) but we do grow lots of greens across all seasons and heaps of herbs hide amongst our perennial flower patches, waiting for us to come pick them – love wild rocket with scrambled eggs! And of course tomatoes love us as much as we love them.

As the weather heats up and everyone here worries about fires, we will all pull together and share whatever we have. We took your tip to re-pot the side shoots from our tomatoes – we gave them as gifts at Christmas. Being thrifty whilst showing we care about others is about as good as gets for seasonally sentimental gardeners!

Thanks and happy growing.

Trish & Felicity
Faulconbridge, NSW

Hey Trish and Felicity, it sounds like you have created an awesome community around your shared love of growing food. It doesn't get better than that. I love hearing how Pip inspires people to do great things. Love your work! Robyn

pip
NOURISHING yourself and the PLANET
HOMEGROWN

Serendipity

Sometimes information arrives at exactly the right time. When planning issue 26 of Pip it was like you knew exactly the projects, plants and advice I would need. It started with Julie Bennett's profile of cleavers – a weed I have always called sticky weed and wanted to know more about. I had just purchased watermelon seeds when I turned the page to Michael and Jude Fanton's extract on how to save watermelon seeds. Hopefully if my first crop is successful I'll never need to buy the seed again.

As I plan my new vegetable garden I was delighted to get advice from Julie on understanding the site and succession planting. I'm looking to build some pergolas to protect north-facing windows and Bec Shann's expertise was invaluable. I'd just harvested my garlic so Kel Buckley's preserving advice was perfectly timed. And finally I have been struggling to sieve my compost with an old broken sieve I picked up in hard rubbish so will definitely be following Kel's instructions on how to make one.

It's incredible that one magazine contained so much information and advice that I can put into practice immediately. Thank you!

Jaclyn Crupi
Author of Garden Like a Nonno

SOCIAL AWARENESS

Our rhubarb champagne recipe never fails to impress readers

Belinda Cornwall My god! The rhubarb champagne is to die for! It's the only thing I drink now besides water and herbal teas.

Sam Hudson I used one of these recipes to make fruit soda with sugar plums and it was one of the best drinks I've ever had in my life! So easy to make and so yummy.

JOIN OUR COMMUNITY

Stay connected at Pip Magazine Community, our closed facebook group, where you can share ideas, information and inspiration for earth-conscious living.

FAIR SHARE

Your place to share inspirational ideas and earth-conscious care with the Pip community.

Stop and swap

I've long been inspired by stories of produce sharing in neighbourhood settings. It's my favourite version of the whole share-the-wealth concept.

Living in the greater Darwin region presents its own challenges for attempts at permaculture and self-sufficiency, as our climate can be extremely difficult to work with.

We are able to grow many Asian herbs and vegetables, and some southern varieties during our dry season, and yet our supermarkets continue to mostly provide a range of southern fruits and vegetables. Consequently most people remain unfamiliar with foods that can be grown locally.

A few years ago I had an excess of lemons so I floated the idea of a 'share table' in the neighbourhood. A few neighbours showed interest so we gave it a try, starting in February 2019. It was a success and we hold a share table on the first Saturday of each month. I love that people in our neighbourhood now contribute and collect seeds, seedlings and mature produce at our monthly table, and many families have been introduced to loofahs, betel leaves, pigeon peas, winged beans, snake beans, gotu kola, leaf ginseng, galangal … the list goes on. Other sharings include banana suckers, lemongrass plants, chilli sauces and books!

Once a month I take the table out onto the street at 8 am and put my contributions onto it. Locals come and go as they please, contributing items and collecting items of interest. There are often great conversations out there and there is very little left over when I bring the table back in at 11.30 am.

Our share table has evolved into a little community event and it never fails to put a smile on my 65-year-old face.

Marita Maloney
via email

SAFFRON

WORDS BY KEL BUCKLEY **PHOTO BY** JULIE BENNETT

Known as the world's most expensive spice, the bright-orange saffron threads have been prized since biblical times for their fragrance, flavour, colour and medicinal value.

Saffron is the stigma of an autumn-blooming bulb called a crocus. The saffron-producing flower (*Crocus sativus*) is lilac in colour and globe shaped, and grows from a bulb to about 75 millimetres tall. Its most notable features are the three long, orange-red pistils that protrude from the blossoms. The stigmas at the end of these are what saffron powder comes from. And the reason it's so expensive is because you'd need nearly 100,000 flowers in order to produce a kilogram of saffron powder.

HISTORY

Because of how little saffron is produced by one flowering crocus, it has been a coveted commodity throughout history. It's believed Henry VIII restricted its use so he would have more for himself; Sir Francis Bacon lauded its health-giving properties; and saffron was responsible for the growth and prosperity of – and gave its name to – a town in England where it was produced in quantity: Saffron Walden.

USES

These days in Australia, saffron is mostly used to colour and flavour foods, but it has a long history of being used all around the world to colour fabrics and yarn, dye hair, flavour and scent food and in traditional medicine.

The compound which gives saffron its distinctive colour and flavour is called safranal, which can improve your mood, memory and even libido. Safranal, along with other plant compounds in saffron such as crocin, crocetin and kaempferol, can act as antioxidants.

GROWING SAFFRON

Saffron isn't difficult to grow in the right environment, so it's advisable to plant your bulbs in a pot so it can be moved around depending on the weather in order to provide optimal conditions for the plants.

Plant bulbs in late summer about 15 centimetres apart and between five and 10 centimetres deep. The bulb isn't too fussy when it comes to soil quality, but a good amount of organic matter is always advised and the soil does need to be well draining, so don't use a saucer if you're planting them in a pot.

Water regularly until the shoot appears in early winter. Each bulb will only produce one flower, and each flower will only produce three stigmas. The flowers will die off in spring and become dormant in summer. Once dormant, move the pot into a protected area and cover with compost, because if the bulbs become too wet during dormancy, you'll run the risk of them rotting.

HARVESTING AND STORAGE

Once the purple flower opens, three saffron-coloured stigmas will appear as well as shorter yellow stamens. Identify the stigmas by their bulbous ends and harvest the saffron threads by pinching them off.

Dry the stigmas in the sun or in an oven on a low setting. You can leave them as threads to add to cooking or grind them into a powder. If stored in a container in a cool dry place, your saffron should keep indefinitely, but the most intense flavour will occur in the first 12 months.

AN ALTERNATIVE

A more prolific and less-expensive alternative to saffron is safflower (*Carthamus tinctorius*). Also known as 'false saffron', it's an annual that's no way related to the saffron-producing crocus and is commonly grown to produce safflower oil. When dried and pulverised, its bright-yellow flowers resemble saffron in both colour and flavour.

Known as 'poor man's saffron', it's both easier and cheaper to process, but doesn't boast any of the medicinal properties of saffron.

The safflower plant resembles a thistle and grows to between 1.5–2 metres tall. Sow seeds in spring after the last frost and provide the plant with plenty of water until the flowers begin to form, then less regularly after that. Cut flowers with a length of stem attached and hang bunches upside down in a warm and shady place to dry, before grinding into a powder. ■

CAPSICUM & CHILLI

WORDS BY MICHEL & JUDE FANTON

Capsicum annum **– from the Greek word, 'to bite', an allusion to the pungent properties of the fruit; annum is Latin for annual.**

ORIGINS

There is some controversy about the origins of chillies and capsicums. While some experts believe various species came from Mexico, it is generally accepted that the ancestors of chillies originated in an area of Bolivia and spread throughout Central and South America.

CULTIVATION

The minimum temperature for successful seed germination is 15 ºC. Seeds can be started indoors in winter and the seedlings planted out in spring when the danger of frost has passed. They require staking if strong winds are common.

Both capsicums and chillies behave as perennials in the subtropics and tropics, and as annuals in temperate climates, but can be cut back and overwintered if well protected. Hot chillies are tolerant of cool weather but are frost sensitive, so it's advisable to grow in pots in temperate climates where they can moved to a protected area during winter.

SAVING THE SEED

The flowers of capsicum and chilli are technically self-pollinating, but crossing by insects does occur. Chilli pollen is dominant over capsicum pollen leading to spicy surprises in the next generation. Caging individual bushes with shade cloth or exclusion netting is a solution if you want to grow several varieties and save their seeds.

Isolation of 200 metres from other varieties ensures total purity. In a small garden, a branch can be bagged, or individual plants can be isolated using a tall crop in between to break the pollinator's flight path. When the strongest bushes carry particularly well-formed fruit, select the best of them. They are ready soon after the final colour for that variety has been reached. Cut the fruit open, scrape out the seeds and dry them on paper in the shade for a few days. Seeds do not have to be washed before sowing.

Chilli seeds are easily extracted by scraping a teaspoon down the length of a halved fruit, but if you have a large quantity to process, they can be added to a blender with a small amount of water where flesh and pulp will float to the top and the seeds will settle to the bottom. Always wear gloves when working with hot chilli and wash hands and utensils thoroughly afterwards.

STORAGE

The seeds are cream, yellow or black, have a flattened looked and a squat, almost-round oval shape. When they are kept in cold, dark and dry storage conditions, they will remain viable for up to five years. There are 150 seeds to the gram.

USAGE

Make an Algerian salad by barbecuing some capsicums, chillies and tomatoes until the skin is charred. Peel, slice and dress with vinegar, oil and garlic. Chillies are high in protein and very high in vitamins C and K.

Research has shown that its active ingredient, capsaicin, aids metabolism and helps prevent obesity. Powdered cayenne is made into a liniment to increase the blood flow in areas affected by rheumatism – but overdoing it may cause blisters.

ON THE LOOKOUT

When chillies and capsicums ripen, they display many vibrant colours; red, black, orange, yellow, brown and even purple. Manzano, which are the purple-flowering group (*C. pubescens*), grow well in Australia. They were highly regarded by the Incas and can grow for 10 years, being the most cold-tolerant of all the cultivated chillies. They do not cross with other species. ◆

This is an edited extract from Michel and Jude Fanton's book *The Seed Savers' Handbook: A Permaculture Seed* (Seed Savers Network 2020) www.seedsavers.net

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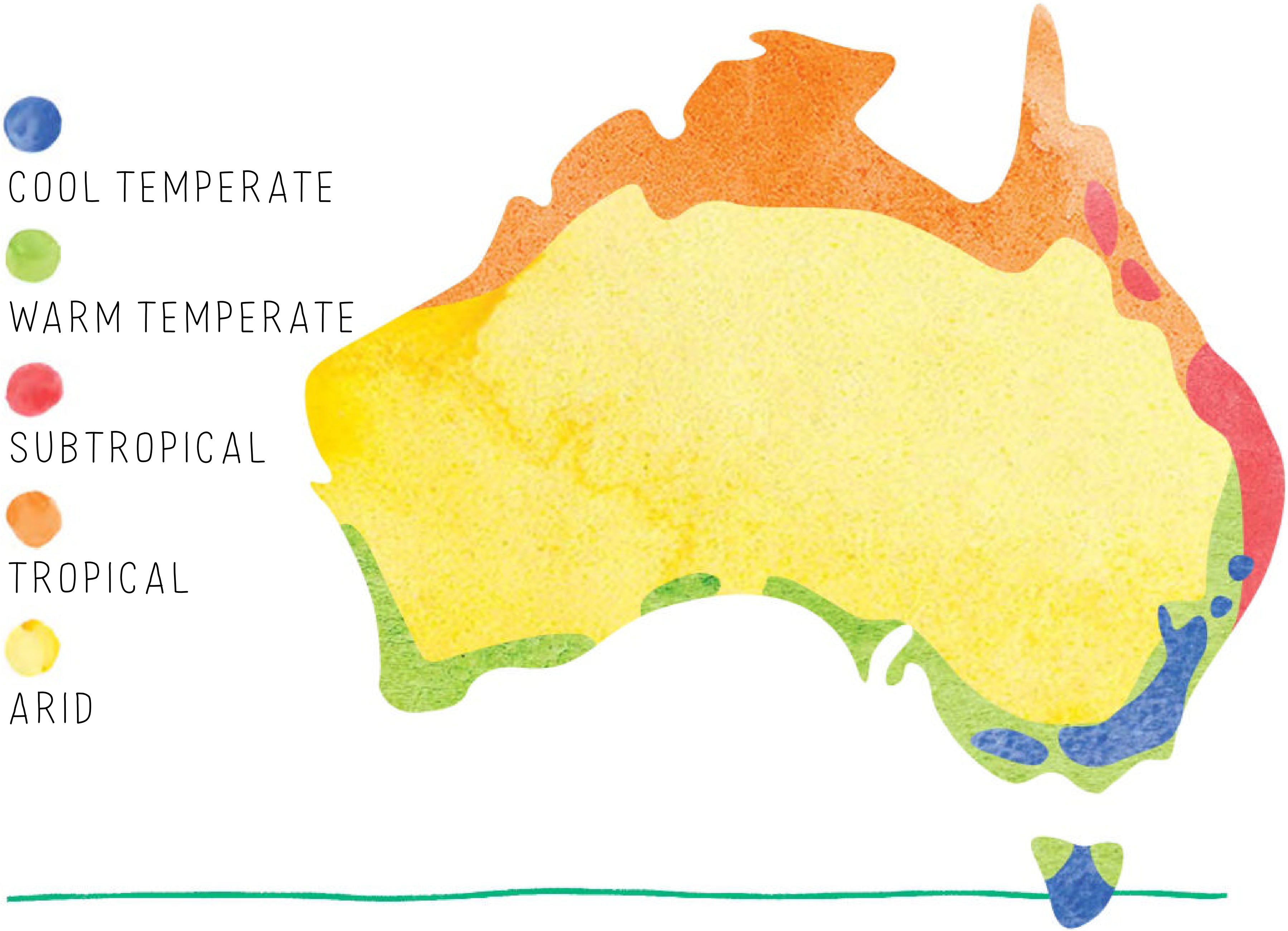

Moon planting

The moon's phases and its associated gravitational pull has a significant effect on the behaviour of tidal oceans, so it's easy to understand how the moon can have a similar effect on the moisture in our soils and plants. By planning what you sow to coincide with the phases of the moon best suited to the type of vegetable and how you're planting, you'll give yourself a higher chance of success as well as increase your yields.

NEW MOON

In the new moon phase, light increases and lunar gravity pulls water higher. In the garden, this means balanced plant growth. A new moon phase is ideal for **sowing plants with edible leaves and seed heads**.

20–26 February
22–28 March
20–27 April

FIRST QUARTER

Light increases further in the second quarter as the moon grows fuller. There is less gravitational pull, making this time ideal for leaf growth. A second quarter phase is the best time for **sowing plants that fruit**.

27 February–5 March
29 March–5 April
28 April–5 May

FULL MOON

After the full moon, as it wanes and light decreases, gravitational pull returns downwards, making this the best week in the month for **sowing root crops, bulbs and crowns**. It's also a good time for **transplanting**.

6–14 March
6–12 April
6–12 May

LAST QUARTER

In the fourth quarter, both the amount of light and the gravitational pull decreases further. Therefore the fourth quarter moon phase is best used for **harvesting, fertilising, making compost and general garden maintenance**.

15–21 March
13–19 April
13–19 May

PIP TIPS

🍃 SOW DIRECT

- Generally speaking, seeds should be sown at a depth of twice their size.
- Because not all seeds will germinate, sow two and nip off the weakest at soil level.
- Successful germination relies on three important things: moisture, warmth and light.

🌿 PLANT SEEDLINGS

- Seedlings are not ready to sow until their first 'true' leaves appear.
- Prepare the bed with a decent amount of organic matter to ensure good nutrition.
- Watering them in gently removes any air pockets and helps them settle into their new home.

🌱 SEEDLING TRAY

- Sow seeds in a sifted blend of potting mix, compost, worm castings and sand.
- Moisten tray with a seaweed solution prior to removal to minimise transplant shock.
- Try to minimise root disturbance and get them in the ground quickly so they don't dry out.

🧅 PLANT BULBS/CLOVES

- Plant bulbs with the widest part at the bottom with the pointy end facing up.
- When planting garlic, choose the biggest cloves to use as seed.
- Use mulch sparingly, if at all. Garlic can have a tendency to rot if it's kept too moist.

👑 PLANT CROWNS/ RHIZOMES/RUNNERS/ SUCKERS

- Mound the soil before draping the spread-out roots of crowns over the top, then backfill.
- If you've cut rhizomes, allow the cut to dry before planting to reduce the risk of disease.
- Where possible, leave runners attached to the mother plant while waiting for roots to develop.

☂ PLANT UNDERCOVER, IN TRAYS

- Plant more seeds than you plan to use and thin out to the strongest as they grow.
- Be sure to label your trays with the variety of your seed and the date it was planted.
- Move seedling tray outdoors for up to a week before planting out to harden off.

	COOL TEMPERATE				WARM TEMPERATE			
PLANT	FEB	MAR	APR	MAY	FEB	MAR	APR	MAY
Artichoke			👑	👑		👑	👑	👑
Asparagus								👑
Basil								
Beans (bush)					🍃			
Beans (runner)								
Beetroot	🍃	🍃	🍃		🍃	🍃	🍃	
Broad beans		🍃	🍃	🍃		🍃	🍃	🍃
Broccoli	🌿				🌱	🌿	🌿	🌿
Brussels sprouts	🌿				🌱	🌿	🌿	
Cabbage	🌱	🌱	🍃		🌱	🌱	🌿	🌿
Capsicum								
Carrot	🍃	🍃	🍃		🍃	🍃	🍃	
Cauliflower	🌿	🌿	🌿	🌿	🌱	🌱	🌿	🌿
Celery	🌿	🌿						
Chilli								
Chives	🍃	🍃	🍃		🍃	🍃	🍃	
Coriander	🍃	🍃	🍃		🍃	🍃	🍃	🍃
Corn								
Cucumber								
Dill								
Eggplant								
Fennel	🍃	🍃			🍃	🍃	🍃	
Garlic		🧅	🧅	🧅		🧅	🧅	🧅
Kale	🌱	🌿	🌿			🌱	🌱	🌿
Kohlrabi	🍃				🍃	🍃	🍃	
Leek	🌱	🌿	🌿		🌱	🌱	🌿	🌿
Lettuce	🍃	🍃	🍃	🍃	🍃	🍃	🍃	🍃
Melons								
Mustards	🍃	🍃	🍃	🍃	🍃	🍃	🍃	🍃
Onions	🌱		🍃	🍃	🌱	🌱	🌿	🌿
Pak choi	🍃	🍃	🍃	🍃		🍃	🍃	🍃
Parsley	🍃	🍃			🍃	🍃	🍃	🍃
Parsnip	🍃	🍃			🍃	🍃	🍃	🍃
Peas		🍃	🍃			🍃	🍃	🍃
Potatoes								
Pumpkin								
Radish	🍃	🍃	🍃	🍃	🍃	🍃	🍃	🍃
Rhubarb								
Rocket		🍃	🍃	🌿		🍃	🍃	🌿
Silverbeet	🍃				🍃	🍃	🌿	🌿
Spinach		🍃	🍃	🍃		🍃	🍃	🍃
Spring onions	☂	🌿	🌿					
Strawberries								👑
Swede	🍃	🍃	🍃		🍃	🍃	🍃	
Tomatoes								
Turnip	🍃	🍃	🍃	🍃	🍃	🍃	🍃	🍃
Zucchini					🌿			

	SUBTROPICAL				TROPICAL				ARID			
PLANT	FEB	MAR	APR	MAY	FEB	MAR	APR	MAY	FEB	MAR	APR	MAY
Artichoke			🍃	🍃						🍃	🍃	🍃
Basil					🍃	🍃	🍃	🍃				
Beans (French)		🍃	🍃	🍃		🍃	🍃	🍃	🍃	🍃		
Beetroot	🍃	🍃	🍃	🍃		🍃	🍃	🍃	🍃	🍃	🍃	🍃
Broad beans		🍃	🍃	🍃							🍃	🍃
Broccoli	🪴	🪴	🌿	🌿			🪴	🌿	🪴	🌿	🌿	🌿
Cabbage		🪴	🪴	🌿			🪴	🌿	🌿	🌿	🌿	🌿
Capsicum	🍃	🍃				🪴	🪴	🌿				
Carrot	🍃	🍃	🍃	🍃			🍃	🍃	🍃	🍃	🍃	🍃
Cassava	👑	👑				👑	👑	👑				
Cauliflower	🪴	🪴	🌿	🌿	🪴	🪴	🌿	🌿	🪴	🪴	🌿	🌿
Celery	🪴	🪴	🌿	🌿		🪴	🪴	🌿				🪴
Ceylon spinach	🍃				🍃							
Chilli	🍃	🍃				🍃	🍃	🍃				
Chives		🍃	🍃	🍃			🍃	🍃	🍃			
Coriander			🍃	🍃			🍃	🍃		🍃	🍃	
Corn	🍃				🍃	🍃	🍃	🍃				
Cucumber	🍃	🍃					🍃	🍃	🍃			
Eggplant	🍃				🍃	🍃	🍃	🍃				
Fennel		🍃	🍃	🍃			🍃	🍃		🍃	🍃	
Garlic			🧄	🧄			🧄	🧄		🧄	🧄	🧄
Ginger							👑	👑				
Kale		🪴	🪴	🌿			🪴	🪴		🪴	🌿	🌿
Kohlrabi		🍃	🍃	🍃			🍃	🍃	🍃	🍃	🍃	🍃
Leek	🪴	🪴	🌿	🌿			🪴	🌿	🪴	🪴	🌿	🌿
Lemongrass	👑				👑	👑	👑	👑				
Lettuce	🍃	🍃	🍃	🍃			🍃	🍃	🍃	🍃	🍃	🍃
Melons	🍃						🍃	🍃				
Mustard	🍃	🍃	🍃	🍃	🍃	🍃	🍃	🍃		🍃	🍃	🍃
Okra	🍃						🍃	🍃				
Onions		🪴	🪴	🌿		🪴	🪴	🌿		🪴	🪴	🌿
Pak choi		🍃	🍃	🍃		🍃	🍃	🍃		🍃	🍃	🍃
Parsley	🍃	🍃	🍃	🍃			🍃	🍃	🍃	🍃	🍃	🍃
Parsnip	🍃	🍃	🍃	🍃							🍃	🍃
Peas*		🍃	🍃	🍃			🍃	🍃			🍃	🍃
Potatoes		👑	👑	👑		👑	👑	👑				
Pumpkin	🌿								🌿			
Radish	🍃	🍃	🍃	🍃			🍃	🍃	🍃	🍃	🍃	🍃
Rocket		🍃	🍃	🍃			🍃	🍃		🍃	🍃	🍃
Silverbeet	🍃	🍃	🍃	🍃			🍃	🍃	🍃	🍃	🍃	🍃
Spinach			🍃	🍃			🍃	🍃		🍃	🍃	🍃
Spring onions		🍃	🍃	🍃		🍃	🍃	🍃		🍃	🍃	🍃
Squash	🌿	🌿					🍃	🍃	🌿	🌿		
Sweet potatoes					👑	👑	👑	👑				
Tomatoes	☂	☂	🌿	🌿		☂	☂	🌿	🌿			
Turnip		🍃	🍃	🍃				🍃		🌿	🌿	🌿
Zucchini	🌿						🍃	🍃	🌿	🌿		

*snow peas only for tropical climate

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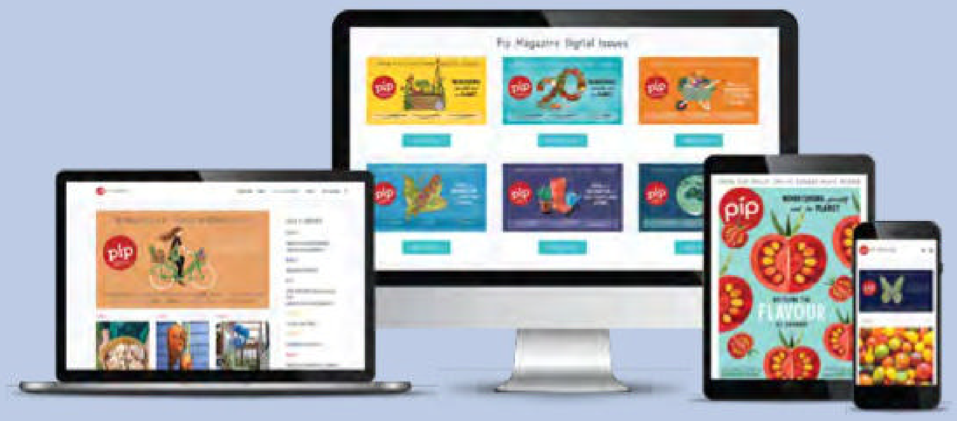

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> A little attention now will replenish the most important element in your garden and lay the foundation for a productive season ahead

SAFETY BUTTON
HB
chio
Spring onions.
Winter beds.
Green Manure crop
leeks.
broc
lettuce
carrots
Beetroot
broadbeans
Alyssium
April
prepared ground for planting garlic.
Great companion to fruit trees + Brassicas
Sow root vegetable seeds now while soil is still warm.
Sow under a full moon

Autumn jobs
WINTER SUCCESS

WORDS BY BEC SHANN

A productive winter garden is created in autumn. So even though the days are still long and the garden is pumping with end-of-season summer crops, ticking off a few jobs now will help ensure there's plenty to harvest in the depths of winter.

While it's hard to imagine that cooler weather will soon be arriving, having a productive winter garden means getting those important garden jobs done early. In between keeping up the water and harvesting your summer bounty, there are some key jobs you can do right now to set yourself up to be putting food on the table when the seasons finally turn.

LOVE YOUR SOIL

Autumn is the perfect time to give your garden beds some extra care after hungry summer crops have depleted nutrients through flowering and vegetable production. A little attention now will replenish the most important element in your garden – soil – and lay the foundation for a productive season ahead. If you live in a hot and humid climate, autumn and winter may actually be your peak growing time – so getting the soil ready to go now is a must.

The first step is to clear any spent crops from your garden and dispose of diseased or pest-infested plants. Once your old crops are out, add some organic matter back in. Apply a 'chop and drop' method to healthy plants by cutting them off at the soil surface and laying them directly on the garden beds, chopping them into smaller pieces as you go. This keeps your soil structure intact and increases soil fertility by leaving the root organic matter in the ground to be food for the worms, in addition to the plants themselves being broken down gradually on the soil surface. Alternatively, you can add the plant matter to your compost pile.

If you've got comfrey growing in your garden, this is a perfect 'chop and drop' addition. It's high in nutrients and breaks down fast. Next, layer over some compost, a sprinkling of fertiliser like aged cow or chicken manure, and finish with mulch to create an instant no-dig top-up on your beds. You can plant out into this straight away, but it's better to leave this for a few weeks before popping in any young seedlings.

If you aren't keen to chop and drop your old plants, boost your soil health and fertility by top-dressing them directly with 10–15 centimetres of compost – homemade is always the best, but a high-quality commercial compost will suffice. Spread the compost evenly over the soil surface, there's no need to dig it in – let the rain and worms do the work for you. If your soil is compacted, aerate the beds by gently using a garden fork pushed into the surface to help break it up. Avoid turning your soil over as this can have a negative impact of the soil biology and structure.

GARDEN HELPERS

If you have a little more time before you need to plant out your next crop, and have a few chickens, put them to work cleaning up the garden beds for you. Flushing your chooks through empty beds is a great way to reduce any lingering pest populations, scratch up the surface and have fresh fertiliser applied. Chickens can be very destructive in the vegie patch however, as anyone with chooks knows, so make sure you keep them well contained to only the areas you want cleared.

In warmer areas with a few more weeks before autumn seedlings need to go in, another way to add organic matter

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> Flushing your chooks through empty beds is a great way to reduce any lingering pest populations, scratch up the soil surface and have fresh fertiliser applied

to the garden is to plant a quick-growing green-manure crop. These can be almost any leafy plant in season (see Five of a Kind, page 14), but choosing legumes like peas or broad beans to add nitrogen back into the system is an added bonus. Spread your green-manure seeds across the surface of the garden bed, scratch the top over with a rake to cover them and water in.

Once your green manure crop is between 20–30 centimetres tall – but before you see any flowers – apply the chop and drop method above to lay it on the beds. Cover over with compost or mulch and let it break down for at least a couple of weeks before planting out your seedlings. This method is more time intensive, given you need to let the crop grow and break down, so is best used in areas with longer growing seasons and milder winters.

TO MULCH OR NOT TO MULCH?

Mulching is of course important in summer, but it also makes sense in some climates to apply mulch in autumn even as the temperatures are dropping. Soils in autumn are still warm, and applying a layer of mulch to damp soil in cooling weather helps to trap that warmth in, fostering plant growth and a healthy soil ecosystem.

Once winter arrives mulch continues to insulate the soil, protecting it from freezing temperatures and frosts. Dry soils cool down faster so not only does mulch provide a buffer from external temperatures, it keeps the soil warmer by retaining moisture too. Conversely, if you live in warm areas without winter frosts and with good winter rain, *not* mulching to allow the soil to soak up all that winter sun without worrying about it drying out may be the best solution for you.

When planting out seedlings into mulched beds, make sure to leave space between the mulch and plant stems to avoid rot and keep a close eye out for slugs and snails that make a happy home in mulched beds. If you're struggling through unusually wet seasons and finding water-logging an issue, skip the mulch altogether, or use a light application of a free-draining coarse mulch instead to protect the soil from heavy rain without adding to the moisture burden.

PLANT OUT EARLY FOR A WINTER HARVEST

In cool and temperate climates, early autumn is your last chance to get seedlings in the ground if you want to be harvesting produce in winter. The warm soil and milder temperatures coupled with autumn rainfall creates the perfect weather for speedy seedling growth. You are aiming to have mature, well-established plants before the cold temperatures and short day length of winter, so the period of late summer and early autumn is key.

If you started raising seeds in January, you should be able to start planting those seedlings out now or in the coming weeks. Depending on what you want to grow, you may still have time to sow seeds. Talk to people in your area to get a clear idea of what's the right thing to be planting out for your local climate, as so much variation can occur this time of year. Inland areas are much more likely to get cold overnight temperatures and early frosts before coastal areas, for example, so it's important to learn the seasons in your own garden – you might find you have more or less flexibility in planting depending on your specific location.

There are ways to extend your planting window. Consider creating warmer microclimates by using glass or plastic cloches or build low hoop-houses or caterpillar tunnels, which are hoops with durable clear plastic stretched over them and act like a mini hothouse on your beds. A coldframe (see Pip Issue 14) made from clear roofing sheets to protect your seedlings when overnight temperatures start to cool is also a good idea. You can remove them during sunny days and replace them at night when the temperature drops.

WHERE AND WHAT

For a winter harvest, early autumn will see cool and temperate area gardeners planting out varieties that will mature quickly or provide a prolonged harvest through winter and into spring. This includes brassicas like cauliflower, sprouting broccoli and cabbage, lettuce, mustard and asian greens, kale, celery, silverbeet, spring onion, radishes, podding peas, snow peas, broad beans,

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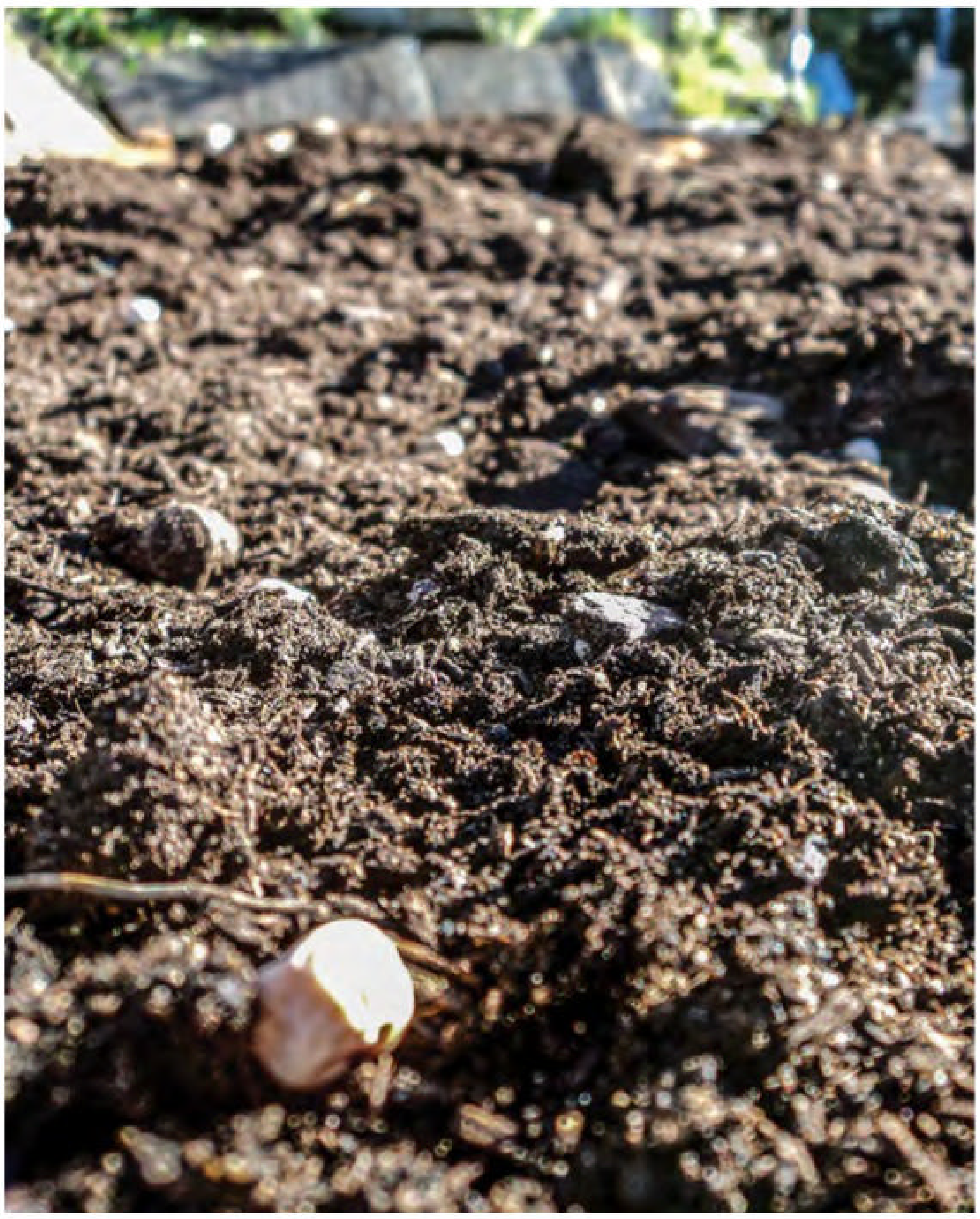


Opening page Some autumn groundwork will reap winter rewards. **This page, clockwise from top** Regardless of the season, feeding your soil with good-quality organic matter is key to homegrown vegie success; Comfrey is a compost accelerator and very useful to have growing in the garden; Top-dressing beds with compost, well-aged manures and mulch will protect soil structure and increase microbial life until you're ready to plant.

> Early autumn is the best time to plant some of those crops that would have struggled through the hot wet seasons

beetroot, carrots (which can be picked as baby carrots later in autumn or left to store in the ground all winter for spring harvest), and annual herbs like coriander and parsley. It's also a great time to plant perennials like chives, rosemary and thyme that will establish quickly and provide a flavour hit through winter and beyond.

In warmer parts of the country, particularly areas with humid summers, early autumn is the best time to plant some of those crops that would have struggled through the hot wet seasons, like tomatoes (cherry tomatoes in particular crop quickly and are more resistant to fruit fly), beans, cucumber and basil. Other seedlings to plant out include beetroot, carrots, leafy and asian greens, celery, coriander, Swiss chard and spinach and peas. Brassicas like cabbage, broccoli, cauliflower and kale can also be planted, but will need to be protected by netting to avoid being decimated by cabbage white moth larvae until the weather cools enough in winter.

INTERPLANTING

With late summer and early autumn being prime time for winter crops to go in the ground, you may run into the problem of still having a garden full of summer produce at the same time as needing to get your seeds and seedlings in the ground. Interplanting is a simple way to retain your current harvest while getting a jump on the season ahead.

Start by looking at which plants have declining productivity or have succumbed to pests or disease, or where there is an over-abundance of something (too many zucchini? Snip out a plant!). These should be the first ones to go to make space for the new season crop. Now top up your soil with compost or manure and plant into the gaps.

You can do this if you plant out in a block or if all your plants are mixed together in a forest garden or polyculture-style and you are only taking out one plant here or there – just apply the compost to the gaps left behind rather than the entire bed.

Be mindful of what seedlings you are planting to avoid placing similar things in the same spot to mitigate pest or disease issues, protect them from snails and slugs and make sure they are not shaded out by the mature plants left around them.

CARE FOR YOUNG PLANTS

You'll also need to keep them well-watered as the established plants will easily outcompete their little root systems if it's hot. When it comes time to remove the remaining mature plants, cut the plant stem off at ground level and leave the roots in the beds to minimise disturbing the remaining and newly planted plants.

Quick growing crops like beetroot, spring onion or lettuce can be planted around mature plants or along pathways to maximise your space too.

Of course, there will come a time when you simply have to get plants that are not quite finished out to make way for the next season. Make the most of it by preserving what you can in the kitchen and get ready for a delicious winter ahead.

This article represents the permaculture principle OBTAIN A YIELD. For more info go to page 99.

Robyn Rosenfeldt

Kel Buckley

Opposite page Legumes, like broad beans, draw nitrogen from the atmosphere and fix it to their roots, making them great to plant before and after hungry crops. **This page, clockwise from top** Temporary poly tunnels can extend the growing season; Getting a head start now will mean more food ready to harvest when brassicas are at their sweetest; A compost bin in the garden will get more use and will give more back to your soils.

Feed your soil
COMPOSTING 101

WORDS & PHOTOS BY ROBYN ROSENFELDT

Growing great vegies all comes down to the health of your soil, and you can't have healthy soil without compost. There are many different ways to create compost at home; which is best depends on your situation and what fits into your space and lifestyle.

Having healthy living soil full of organic matter and microorganisms is essential to growing nutritious food. Compost you buy in a bag or from a nursery is never going to be as high quality as what you can make at home. And by making your own compost, not only are you creating rich organic matter to maintain healthy soils, but composting is a sustainable solution to your food-waste problems and an inexpensive way to deal with any green waste around your home.

Compost can get a bad rap. When some people think of compost, they think of a pile of smelly rotting vegetables with flies buzzing around it. This isn't true compost. Regardless of which system you choose, true compost is a healthy balance of carbon and nitrogen – it smells sweet when the ratio is right – and it's turning your food and green waste into rich and nutritious compost to build and maintain soil health.

There are many different ways to create compost. There's hot compost, cold compost, compost tumblers, compost bins, a compost pile, bokashi systems, even worm farms.

SPACE AND OUTCOME

How much space you have will really determine the best composting system for you. If you have limited space like a small courtyard or backyard, then you will probably want to use a bin, tumbler or worm farm, so it is contained and can be accessed easily from the house. If you have a large backyard or property, you will have space for a bay system which, depending on how you use it, allows you to create larger amounts of hot or cold compost. It's better to have these open-style systems a bit further away from the house though, as they are harder to keep rodent proof than the closed-style systems.

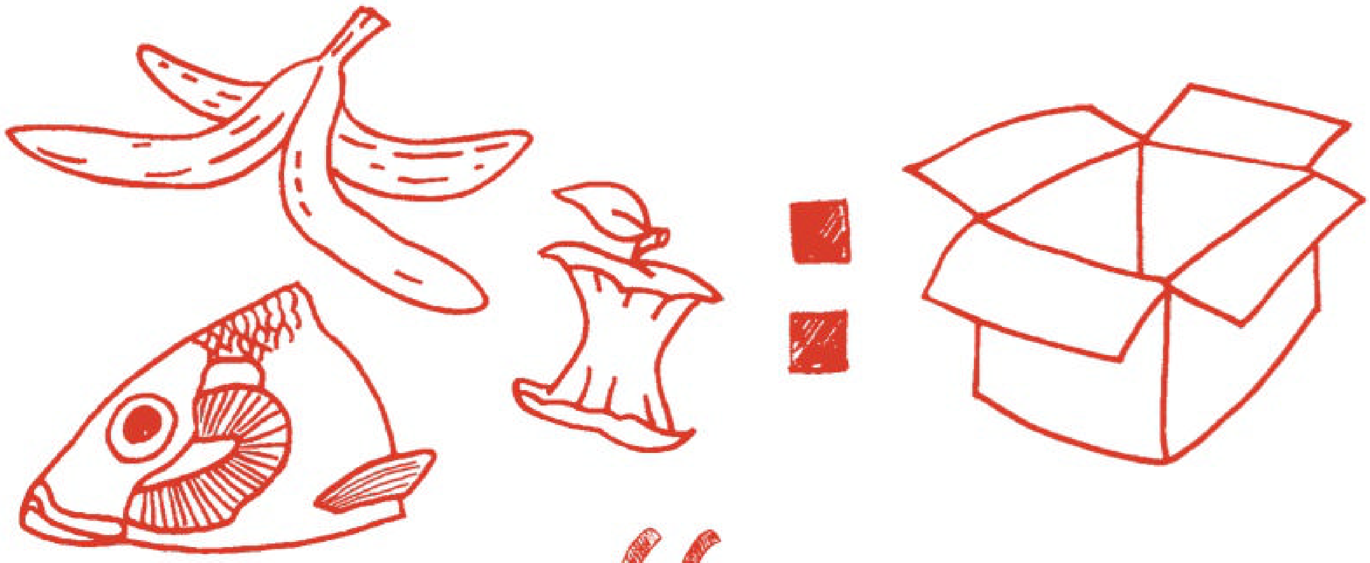
Choosing the right compost for you also depends on the outcome you require. If you are composting as a way to manage kitchen waste and you only have a small garden, then a tumbler, bin or a worm farm will be right for you. If you have a bigger garden and you require large amounts of compost, then a larger bay-style system is probably more suitable. They are also better at dealing with larger quantities of garden waste that might not fit in a smaller bin.

MAINTENANCE

Creating compost is easy when it becomes part of your household routine; collecting nitrogen-rich organic waste in the kitchen, taking it out to the compost, adding the right amount of carbon and giving it a turn. It takes very little time in the scheme of things and means your compost is remaining alive, active and healthy. Air and moisture is just as important as carbon and nitrogen and so an aerator is a successful composter's best friend. This corkscrew-like tool mixes and aerates composts in a closed-style bin that is otherwise difficult to get a fork into to turn. These closed-style systems require short bursts of regular maintenance.

INGREDIENTS

All compost is made up of nitrogen, carbon, air and water. Sometimes referred to as the 'green' component, nitrogen consists of anything juicy and living; food scraps, grass clippings, plants that are still fresh and green looking, farm animal manure (not dogs or cats), coffee grounds, etc. Carbon, or the 'brown' component, is made up of things that are generally dried, such as leaf litter, shredded paper and cardboard, straw and even sawdust. ›



> Getting the carbon-to-nitrogen ratio is trial and error. In general, you want two-to-three parts of carbon material to one part nitrogen material

Depending on the system you're using and the amount of compost you want to make, there's plenty of ingredients available in the community. Neighbourhoods are great harvesting grounds and at the same time you are using items that would otherwise be waste products.

You could collect dried and fallen leaves from a local park or offer to clean up leaves for your neighbours. Find a source of shredded paper, although make sure its not glossy and, better still, has been printed with vegetable inks (like a copy of Pip!). You might be able to find bags of coarse sawdust from a wood worker, just make sure the wood hasn't been treated with chemicals.

Ask your local green grocer for food waste – you could potentially get boxes of it. If you live by the coast, and depending on your local regulations, foraged seaweed makes an excellent nitrogen addition, or if there's livestock near you, see if you can pick up some bags of manure. If you have chooks, both their bedding and manure can be turned into nutrient-rich compost, and you could even try your local fishmonger, as fish frames are very high in nitrogen.

Meat products will have a higher chance of attracting vermin, so fish scraps are best used in a hot compost where it breaks down faster and the high heat and moisture levels will help deter rats and mice.

THE RIGHT RATIOS

Getting the carbon-to-nitrogen ratio right is trial and error. In general, you want two-to-three parts of 'brown' material to one part 'green' material. But don't get too caught up trying to create a perfect balance, it will make your head hurt. It might not be perfect in the beginning, but it is something you'll refine as you go and get a good feel for depending on what your compost looks and smells like.

If your pile is getting sludgy and smelly, there's too much nitrogen, and if it is dry and slow to decompose, it probably has too much carbon. Composts are renowned for having too much nitrogen as most composts are mostly made up of food scraps, so whenever you add scraps to your compost, always add in twice the amount of lovely dry carbon material. It's a good idea to add carbon into your indoor scraps bin as you go, too, to help streamline the process.

HOT COMPOST

Hot composting is the Lamborghini of composting, if done correctly, it is fast, it creates top-quality compost and large amounts of it. It does require a bit more space and more materials at the start, and it needs a bit of monitoring and maintenance to get the best outcome.

Hot compost is a pile that's created all at once which, provided you have the right ratio of nitrogen and carbon, will reach temperatures of around 50–60 ºC within a few days. The heat will ensure your compost breaks down efficiently as well as killing weed seeds and pathogens.

Hot compost requires a bit of preparation as you need all your materials gathered together at the same time to build the pile. And to work efficiently, a hot compost needs to be at least one cubic metre in size. To build the pile, alternate layers of carbon and nitrogen and water it all really well as you go. If turned weekly, a hot compost pile can be ready in a matter of weeks, although it will still break down if left unturned as long it stays nice and moist, it will just take a little bit longer.

COLD COMPOST

Cold compost is added to gradually over a period of time, matching nitrogen and carbon ratios as you go, and again, turned regularly. While it can be created as an open-style system, the closed bin- or tumbler-style systems are the most popular and well-known form of cold composting. And while all working compost systems will heat up as they're breaking down, they won't get as hot or break down as quickly as a hot-compost pile will.

Cold compost requires a little less maintenance and can be done in gardens of most sizes. If you're using an open- ›

Opening page Keeping a compost moist is important for the process. **This page, clockwise from top** Composting means food scraps stay out of landfill; If you live near the ocean and your local regulations allow it, adding seaweed to your compost will add useful minerals to your soil; Place your bin where it's going to be easy to use and maintain; wood chips are a good source of carbon – as long as you know the timber's origin.

> To build the hot compost pile, alternate layers of carbon and nitrogen and water it all really well as you go

Watch the video!
on the Pip website

bottom bin, stand the bin on top of some wire mesh to stop vermin digging their way in from the base, while still giving earthworms good access to help the process. Add your food scraps and carbon material to the bin and check the health of the pile with your eyes and nose while you're there, and aerate, adding material or water as required.

COMPOST TUMBLER

Raised off the ground and sealed, a compost tumbler is the best and most effective way to ensure rodents don't help themselves to the organic matter that's breaking down inside. It's also good if you have physical issues that prevent you turning compost with a garden fork or using an aerator. Of course the downside of being sealed is they can't attract worms and other useful organisms.

To work well, the ingredients added to a compost tumbler need to be small and finely chopped, and if a tumbler is filled more than about three-quarters full, not only do they become heavy and very hard to tumble, but the mixture inside has no room to turn over on itself.

WORM FARM

Whether you have a small balcony garden or are on acreage, a worm farm is a great way to deal with food scraps. They create rich worm castings to feed your soil but also liquid worm 'wee', which is pure gold when diluted and spread on the garden.

Worm farms take a little more love and care than a compost, in that you need to feed them small amounts regularly and you need to keep the balance of food right. Too much and the worms won't be able to get through it in a timely manner and it'll rot, too little and they will starve. You also need to keep an eye on moisture levels – they don't like it too wet or too dry. They also like it dark, so covering it with cardboard, newspaper or hessian will keep it dark, and at the same time help regulate both the temperature and moisture levels.

Unlike compost, worms can cope with a higher nitrogen ratio, so they're good for processing kitchen scraps. Adding the odd mushroom bag or shredded paper is fine, but be careful not to create the perfect composting environment, or the farm will heat up too much and kill your worms.

Take the time to chop the scraps into small pieces so worms can process it quicker, and avoid citrus and onion – they won't eat it. Having said that, you'll be amazed at what they can chomp through given enough time. The more care you take, the more the worms will give back to you in the form of food for your soil and plants. They may not be the best company, but they're an excellent way to process all of your organic kitchen waste.

This article represents the permaculture principle USE AND VALUE RENEWABLE RESOURCES AND SERVICES. For more info go to page 99.

Brian, Kaylene (and Chook)
TOP 24 EASY TO GROW vegetable seed packs

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Preserving tomatoes
PASSATA DAY

WORDS & PHOTOS BY MARIA CIAVARELLA

As people look to have more control of food production, a long-held custom for Italian families in Australia has become more mainstream. 'Tomato day', 'sauce day' or 'passata day' – whatever you'd like to call it – is a day for reconnecting with all generations for the annual passata-making tradition.

To the uninitiated who have Italian neighbours, the gatherings of young and old in backyards for a day in February or March could seem quite mysterious. There are cauldrons, smoke, old men barking instructions, younger men lugging around crates and bowls filled with blood-red juices, women getting on with work and the scent of freshly picked basil. If the neighbours poked their heads over the fence, they would see rows and rows of clean bottles being filled and lids fastened, all ready for the final step. Fires are stoked and watched carefully before much laughter, food and exhausted merriment signals the main work is finished.

This custom of making enough bottles of passata to last until the following year has endured in Australia, even with the passing of the original postwar migrants. When they first came to Australia, these preserving traditions were done through necessity.

Each season had its own rhythm for these Italians: summer meant the warm-season vegetables would be pickled; late summer meant sauce making; autumn was wine, mushrooms and green olives; winter was black olives and salami-curing time, while spring was the time to plant all the vegetables that would provide the ingredients for the preserves ahead.

THE PROCESS

The process of making the passata is basically the same now as it was then, but machines have taken a lot of the hard physical labour out of the process. It is simply a matter of squeezing the tomatoes to separate the pulp from the skin and the seeds, bottling the sauce and then heat-treating the sealed bottles for a long shelf life. Different family traditions tweak the process at different stages and this does result in slightly different sauces.

In terms of the equipment needed for a successful passata-making day, it's tubs for washing the tomatoes, access to water, pots to blanch the tomatoes and then the pots or drums to create the waterbath are also required.

THE TOMATOES

Sauce day might involve dozens of boxes of tomatoes being processed if several families are working together. If the tomatoes weren't grown in the garden, it would be a visit to one of the many roadside stalls found in areas where Italian households could be found, where the cases of tomatoes were sold off the back of the trucks that had come directly from the farms. If they were bought from a greengrocer it was always prudent to put in an order beforehand to ensure they were kept for you. The tomatoes were grown especially for this purpose. They still are and are a type of roma or pear-shaped tomato. They are not particularly tasty to eat raw, but they are 'meaty' with a lot of pulp, which is perfect for making thick sauces.

Nowadays, tomatoes are still available from February through to April but it is a good idea to order them if you want more than one box at a time. ›

> Physically picking up each tomato and taking a cut out of the top makes for good quality control

For backyarders who can grow their own tomatoes, the sauce day would probably be done in smaller batches over several sessions as the tomatoes ripen.

ELECTRIC ASSISTANCE

In its simplest form, the machine is like a mouli-mill. This separates the sauce from the seeds and skins of the tomatoes. A hand-operated mouli-mill is adequate for small-scale passata production, but a version that can process more tomatoes with less cranking is preferred by Italian families. The *spremi-pomodori* (which translates to 'tomato presser') does just this. There are hand-operated table-top machines which work well for smaller batches, but for serious quantities, a mechanised version of the *spremi-pomodori*, with half or one horsepower behind it, makes quick and easy work of the pulp separation. Either version can get quite messy, however, so the sauce making always happens outdoors.

SQUEEZING TIME

There are two ways to create passata, either by cold squeezing the tomatoes or by blanching them first. For cold squeezing, the tomatoes are washed, cut into halves or quarters and then processed through the *spremi-pomodori*. The resulting sauce is quite watery but this makes it easy to bottle.

If using the blanching method, the tomatoes are washed, the stalk-end is removed, they're cut in half and then the tomatoes are blanched in a large pot of boiling water. Once removed and drained well – the better they're drained, the thicker the sauce will end up – they are processed through the *spremi-pomodori*. Since a lot of the water is removed during the blanching and the tomatoes have been softened, they pass through the machine easily and the resultant sauce is much thicker. To gauge how many bottles you'll require, one box of tomatoes weighs about 17 kilograms and you could expect to get between 10 to 12 litres of sauce per box.

Some families skip the step of removing the stem end and only wash the tomatoes before blanching, arguing the stem end is removed with the machine anyway, making it an unnecessary extra step. However, physically picking up each tomato and taking a cut out of the top makes for good quality control as well, so that any unripe or rotten parts of suspect tomatoes can be removed before they taint the entire batch of sauce.

GET SAUCING

The *spremi-pomodori* separates away the seeds and skin but there is still more useful juice in these discarded parts, so they are put through the machine at least two more times until the final discards are very dry.

Once, the only bottles which could be collected in large quantities were longneck beer bottles. Now the standard 720 millilitre passata bottle can be reused from year to year. While the size and large opening makes passata ›

Opening page The tools of the trade that only comes with generations of experience. **This spread, clockwise from top left** A successful passata day takes many hands; Each fruit is trimmed and halved before processing; Blanching the fruit first will make a thicker passata; Traditionally, a fresh basil leaf is added to each bottle before they're filled; An electric *spremi-pomodori* takes the manual labour out of pressing the tomatoes.

> You need to heat the filled bottles in a water bath in order to kill off any bacteria as well as forming a vacuum seal on the lids

bottles easy to fill, any glass jars with metal screw-top lids can be used – but just make sure the lids are in good condition, and not rusty or bent.

Before you start filling, mix the sauce thoroughly to achieve an even consistency throughout the batch. As the bottles are being filled, it's customary to add a leaf or two of fresh basil for flavour. Wipe any spilt sauce off the rim of the bottle and seal tightly with the lid.

PRESERVING THE BOTTLES

To ensure the passata remains shelf stable throughout the year, you need to heat the filled bottles in a water bath in order to kill off any bacteria as well as forming a vacuum seal on the lids.

This process was traditionally done in 44-gallon drums over open fires. These days, most people will use a portable gas ring set under a metal stand to hold the drum and its contents. The preserving can be done on a much smaller scale in the kitchen using a large stockpot but, considering the number of bottles required for a year's supply, large drums is a much more efficient way to do it.

After setting the drum in place over the heat source, line the base of the drum (or stockpot) with an old towel or a thick layer of newspaper to prevent scorching of the sauce closest to the base, before packing the bottles into the drum. The bottles can be laid on their sides, but it is a good idea to pack them in tightly so that they don't jiggle and potentially break when the water starts to boil.

Once the bottles are in, fill the drum with enough water to cover the bottles, before using another thick towel to keep them submerged. Turn on the heat, whether it be an open fire, gas ring or the stove top, and heat the water slowly until it gets to at least 80 ºC. It needs to be kept at this temperature for one hour or more to ensure that the pasteurisation process works. If the preserving isn't done sufficiently, the contents will ferment with the bacteria multiplying within, and the bottles might explode.

The heat build-up within the bottle then vacuum-seals the lid once it cools. If the lids are faulty, the contents might seep out over time and they will be very smelly as the sauce ferments. If the water starts to boil, it won't affect the outcome, it will just mean your bottles will jiggle around a lot more and potentially crack against each other. After the hour at temperature, leave the bottles in the bath and allow the water to cool until the next day.

Once the bottles have been cooled, removed and distributed among friends and family, store them in a cool, dry place out of direct sunlight until they are needed for the base of a delicious pasta sauce. Use your passata for a base when making a pasta sauce, adding any ingredients or flavours as you like.

Community connections

SO MUCH MORE TO GAIN THAN A YEAR'S WORTH OF PASSATA

Although it takes some serious organisation skills, the annual passata day represents far more than just acquiring a haul of tomato sauce for the year ahead. For so many families and community groups, Italian or otherwise, an annual tradition like this is about the important connections of coming together and working towards a common goal.

For those growing up with Italian parents, the annual tomato day wasn't necessarily a favourite day, but it has now become an enjoyable ritual that groups of friends look forward to for a good laugh and an annual catch up.

Think about starting an annual passata day with a group of tomato-growing friends, family or neighbours. Not only will you all end up with a flavoursome batch of passata far superior to anything you can buy commercially, but you'll all reap the benefits of community connections and delight in the joy of ritual. And of course, the satisfaction of having a pantry – or garage – full of passata to last until the next time.

This page, clockwise from top Filled bottles are sealed and wiped; The same process can be applied to your smaller backyard harvest; The human connection of passata day can be just as important; Heating the bottles ensures a long shelf life; Forty-four gallons of passata jars, to be precise.

Health tonic

BONE BROTH

WORDS & PHOTOS BY KEL BUCKLEY

There are so many benefits to making bone broth, and they extend further than the many health benefits. The flavour of homemade broth is far superior to any stock you can buy, it's considerably less expensive and you're using more parts of an animal that would otherwise be wasted.

As the perfect way to use up bones like chicken or fish carcasses, as well as some tired-looking vegies in the bottom of the crisper, most of us are used to making stock as a versatile base for many dishes. But taking things a step further and creating bone broth, which with a bit more cooking time releases more nutrients from the ingredients, is better for you, your tastebuds and your hip pocket.

Bones contain a long list of vitamins and minerals which are released when bones are broken down in the cooking process. This is why time is the important difference between making a flavoursome stock compared to a nutrient-dense broth. Assuming you're using bones from ethically raised animals, you'll need to simmer beef or lamb bones for a minimum of 24 hours to create a high-quality bone broth, at least 12 hours for chicken, and somewhere around eight hours to extract the most out of fish bones.

CHOOSING THE ANIMAL

Bone broth can be made from the bones of any animal; chicken, fish, lamb, beef, pork or a mixture. But the availability of the different type of beef bones makes it a good choice for those looking to maximise the nutritional benefits of a homemade bone broth.

While many people like to use a chicken frame for the base of their bone broth due the versatility of the finished product in the kitchen, the larger size and higher density of beef bones, and again the different types available, means you can extract more targeted goodness out of them for a more nutrient-dense result.

If you're wanting to build muscle, you might choose to use chicken bones over beef bones due to chicken's higher content of leucine, an amino acid that aids in building and repairing muscle. But the amount of vitamins, minerals and flavour you can extract from beef bones is greater than what you can get from the same weight in chicken bones.

Importantly, while chicken broth is still very good for gut health, beef broth is better due to the higher concentration of glycine which repairs and protects the mucosal layer of your small intestine and gastrointestinal tract.

CHOOSING THE BONES

To get the most from the many hours that go into making bone broth, you should look at including at least three different types of beef bones.

The first is marrow bones. The original superfood, bone marrow is rich in vitamins and minerals, it's high in protein, and it contains collagen and glucosamine, nutrients which support healthy joints and skin. It even contains stem cells, which helps with red and white blood cell production.

The second type of bone is a gelatinous bone with plenty of cartilage, such as oxtail, knuckles or feet. Not only is the gelatin and collagen great for healthy joints and skin, the glycine is great for gut health, as mentioned, and it naturally increases serotonin levels, too, which puts us in a better mood and can improve sleep.

Lastly, conventional 'soup' bones which have a good amount of meat on them are crucial for producing a deep flavour and rich colour in your finished broth. ›

> There aren't any rules, you can tailor your broth to suit your needs and flavour preferences

AIDING EXTRACTION

There are couple of things you can do and add to make sure you're getting the most amount of nutrients out of your bones. The first is to roast them in a hot oven before adding them to your pot. Roasting them for between 45 minutes and an hour at 200 ºC starts the breaking-down process and helps to extract the most from the bones. Season the bones well before roasting them, and the 'cooked' bones have the added benefit of creating a rich flavour and colour to your broth. Adding a good glug of apple-cider vinegar into the water does a similar thing too, in terms of helping you to extract nutrients, and depending on how much you use, adds a certain tanginess to the flavour of the finished broth.

OTHER INGREDIENTS

While the trio of onion, celery and carrot is hard to go past, other ingredients you might choose to use in your broth are completely up to you. It's a good way to use up any tired-looking vegies you might have – and parts of vegetables that might otherwise end up in the compost are good too, like the stalks of broccoli or rainbow chard.

Whole bulbs of garlic cut in half add to the flavour, add a dozen or so peppercorns, a couple of bay leaves and any other herbs from the garden. Ginger and turmeric can be added for their own nutritional benefits – there really aren't any rules, you can tailor your broth to suit your needs and flavour preferences.

You might add a handful of chicken necks to your pan before roasting your beef bones, you might find including a few shitake mushrooms in the pot makes for a more complex flavour. If you make it regularly, you'll most likely find the ingredients change depending on what you have at hand or what's in season.

COOKING THE BROTH

Once all of your ingredients have been added to the pot, cover the bones, vegies, herbs and spices with water and bring to the boil. Once boiling, reduce the heat to a simmer and allow it to tick away for at least 24 hours, but the longer you leave it, the better the end result will be.

Add a sheet of baking paper between the pot and the lid to reduce evaporation losses, too. If you have one, another option is to use a pressure cooker which not only reduces the time required to produce a nutrient-dense bone broth, but also means you won't lose anything to evaporation.

A multi-cooker with a pressure function is a great tool to have. If you pour the fat off the roasted bones into the cooker and set the unit to its sauté function, you can brown the onion and garlic and anything else in the oil while you're preparing the other vegies, which adds even more depth of flavour to your finished broth.

This function means you can add the water and your broth can be bubbling away while you're finishing off, before putting the lid on and setting it to the pressure function. Once finished, strain the broth and allow it to cool, before removing the layer of fat on top. The fat can also be kept and used to oil pans or as a flavoursome replacement for oils or butter in cooking. ■

Basic bone broth

INGREDIENTS

2 kg mixed beef bones, seasoned
1/4 cup apple cider vinegar
1 onion, quartered
2 celery stalks, chopped into 10 cm lengths
3 carrots, halved lengthways
1 garlic bulb, sliced in half
12 peppercorns
2 bay leaves
4 litres water

METHOD

Preheat oven to 200 ºC. Arrange bones on a lined baking tray and roast for at least 45 minutes. While the bones are roasting, add the remaining ingredients into a large stockpot. Add the bones, as well as any marrow, seasoning or blackened bits left in the tray, and cover with water. Bring to the boil before reducing to a slow simmer for 24–48 hours.

Opening page Experiment with ingredients depending on what you have. **This page, clockwise from top** Diversity is key when it comes to what bones to include; Herbs are a great addition for added flavour; Broth can be used in cooking or, better still, consumed as a daily cuppa.

Enoughness
THE NEW PLENTY

WORDS BY SARAH AITKEN **PHOTOS BY** NATALIE MENDHAM

As overconsumption continues to drive the climate crisis, one Tasmanian building designer is quietly trumpeting the idea that less is actually more.

Jane Hilliard is on a mission to claw back the overconsumption rampant in the building industry. Swimming against the metaphorical tide that promotes ever-expanding McMansion-style developments, Jane champions the concept of 'enoughness' in her professional life and in her everyday life, too.

In Jane's own words, enoughness is about 'working out what you need to be happy and healthy, without taking more than your fair share.' And when our homes are created with this in mind, the positive impacts radiate.

Jane is the founder and head designer at Designful. Based in nipaluna/Hobart in Tasmania, Designful creates beautiful, humble homes and small buildings for those who want to focus on mindful design. Dotted across urban and rural landscapes, the builds sit in harmony with their surrounding landscapes.

UNEQUAL RESOURCE USE

Just as in other industries (think energy, fashion, transport, agriculture …), wealthy countries are using more than their fair share when it comes to the building industry. And Jane says it's well and truly time to scale it back.

'High-income, privileged countries are consuming the most raw materials from this earth, building the biggest homes and emitting the most carbon emissions per capita of all the countries on earth,' says Jane. 'There is a direct correlation.

'In wealthy countries (and Australia is one of them), we are using on average 28 tonnes of raw material and resources per person per year. Now that doesn't mean much on its own, but this 28 tonnes of material we are using means a lot when we consider that ecologists have estimated that eight tonnes per person per year is the amount that we can use and stay within safe planetary boundaries.

'The one most powerful thing we can do to slow the ruining of this planet is to just use less,' says Jane. 'The real problem is we consume too much and this consumption uses a heap of energy. We are at a point in time when we need to be thinking about our choices and how this affects others and the planet. And a way we can do this is by asking new and honest questions.'

Jane says the home is an obvious place to start.

FOCUS ON THE HEART

'Our homes are where our lives are centred and where we can start, by considering them as a vessel for creating change. Our homes are where values are formed and held, where we rejuvenate and dream about our life and our future. They shape our habits and affect how we feel, they support us to go out into the world and do great things.'

In a world where we're encouraged to take up more space, retreat from one another, keep up with the Joneses and up the resale value of our homes, Jane and her team encourage clients to think about their own values and go from there. To consider enoughness, and to think about the heart of the home first and foremost. To think about the materials they wish to use and about how they use their home. That might mean asking yourself if you actually like

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> It is no good having the dream home if you can't have a lifestyle that aligns with who you are

having people come and stay in your home regularly? If the answer is no, perhaps you're better off reclaiming some of your property as a garden rather than adding a spare guest suite. It might mean focusing on building a home that invites you in by the hearth but also encourages you out into an easily-accessed garden. And it might mean sticking with just the one loo.

Jane believes we should focus our attention, resources and finances on particular areas of the home.

'That's the heart of the home, and how it relates to its place and land,' she says. 'The edges of our home, where it touches the environment – the transition spaces from inside to outside that foster healthy relationships and build back a reciprocal relationship with our environment. The envelope of the home is important to make sure it is energy efficient, robust and is a considerate use of precious materials so will stand the test of time for future generations.

'Invest in good design that will function well and support your values and be a positive and mindful contribution to the built environment.'

POSITIVES OF LESS

Fewer things and smaller spaces to upkeep give us freedom. They're also generally cheaper, freeing up not just our time but our finances too.

'The things we need to be healthy and happy are free and not things at all,' says Jane. They're our connection to others, to nature, to our purpose and to ourselves. 'The less things we have in our lives to cling onto, take care of and pay for, the more time and space we have for these truly meaningful things that are satisfying our human spirit.

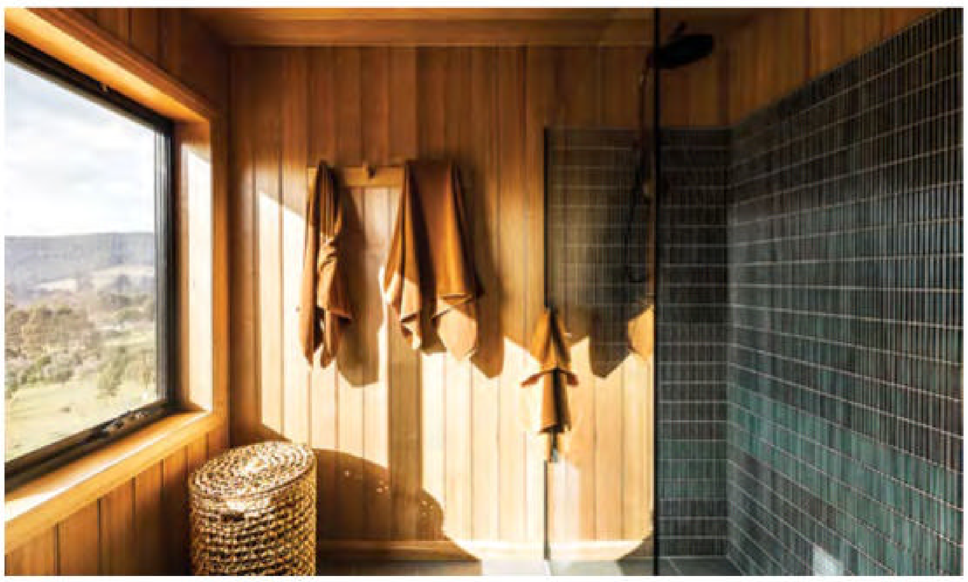
'Less financial burden creates space in our lives for time to cultivate our values and tend to our connections and most meaningful actions. We seem to be striving to fill the void with things that increase our wealth, but also our financial burden, and one of these things is often our home. The cost of anything is the amount of life we are willing to exchange for it.

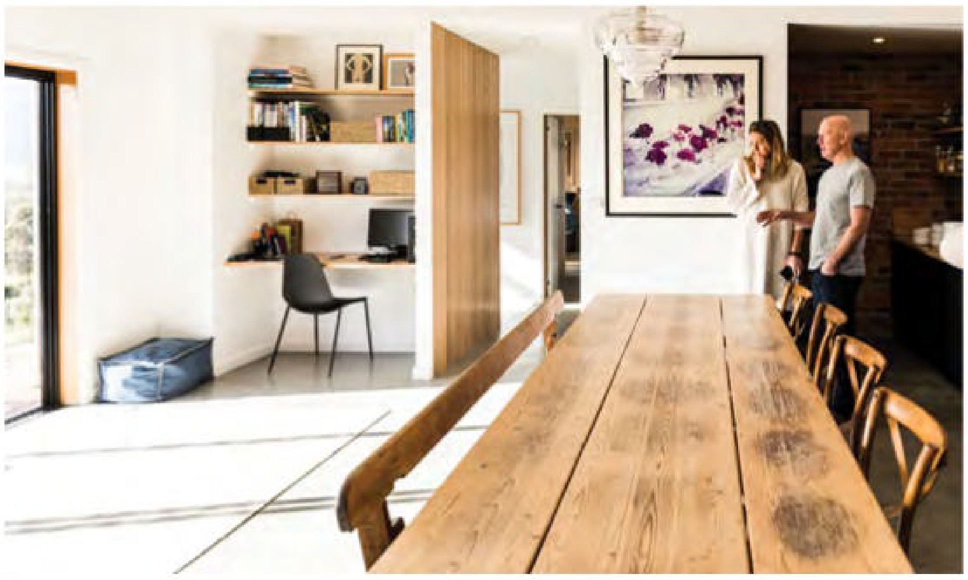
'I like to rephrase the "dream home" to the "dream lifestyle". Because when I spend time talking with clients about this, what they really value is an ideal lifestyle that is aligned with their values. After all, it is no good having the dream home if you can't have a lifestyle that aligns with who you are.'

COMING BACK TOGETHER

Jane says the expansion in home size, with added luxuries like parents retreats and individual rooms and ensuites for all family members plus guests, has done us a massive social disservice by encouraging families to spend even less time together than we already do.

'Parents retreats make me sad,' Jane, who is a parent herself, laments. 'I understand that life and parenting is hard, it's tiring and we are all just craving some quiet stillness. There are so many things that are dissolving the family unit and our time together: central heating, devices, internet in every room. I feel the practice of being together, of conflict resolution, of sharing space, of the ability to carve out our own time to foster the practices for our own wellbeing is slipping away. ›





Opening page Jane Hillier is making change, one (less) toilet at a time. **This spread, clockwise from far left** A bigger garden can be more practical than a large building; Windows can make small spaces feel bigger; Blurring the indoors and out means buildings can be smaller; Clever storage solutions make the most of what would otherwise be disused space; room dividers can create zones in large open-plan rooms.

> Perhaps you're better off reclaiming some of your property as a garden rather than adding a spare guest suite

'We need homes that foster the habits of spending time outside and with nature going for a walk or developing relationships with other places that bring us solitude and peace.'

THE VIEW ON THE LOO

Jane's passion for enoughness has seen her feature on numerous podcasts and give a keynote speech at the recent Building Designers Association of Australia National Festival of Design. It's obviously resonating within the industry and amongst the wider population, but not everyone is on board just yet. During a recent conversation on the *Undercover Architect* podcast with Amelia Lee, Jane suggested we might be including too many toilets in our new homes. She giggles at the backlash that that small part of the larger chat received.

'The idea of only having one toilet in a home seems outrageous to some!' Jane laughs. 'For reasons such as having to wait or the smell, and I'm wondering; is it really the toilet that is the bottleneck of the bathroom facilities? From my experience it's the shower or vanity that is often actually the area that has the highest traffic in the mornings. I'd just like people to think about it, observe and ask more "why" questions.'

THE INSTAGRAM EFFECT

When we step back and look at the relentless marketing and advertising inherent in the multi-billion dollar building industry, it's no wonder we're all confused about what our homes should look like.

'Images will come to mind, we see them every day in magazines, on instagram and in ads,' says Jane. 'It seems in our area of work that success is to deliver what looks like the "dream home". But is it really a dream home if we are maxed out financially and have to work more and longer hours; if we feel guilty about not spending quality time with our children; if we reduce our time for connection and doing things we like to do? All with an added feeling of having to keep our so-called dream home clean and well presented?'

Using more sustainable materials and creating more energy-efficient buildings is a must as we move forward into the future, but Jane hopes to see more holistic changes on a bigger scale.

'What we need are people unsubscribing to a consumerist way of living, asking new questions and embracing enoughness, not just in their homes, but everywhere. We need more people living and satisfied with enough.'

Enoughness advice

JANE'S FIVE TIPS FOR PLANNING A BUILD OR RENOVATION

Know your values. Get clear on your values, consciously know them, write them down. Be honest with yourself, they need to be your values, not things that society or other people deem important. Also get clear on the reason for your project, what your financial capacity is and how you are going about it.

Understand your land. The piece of land or existing property you buy will have a significant impact on the cost, complexity and length of the process you need to undertake. This requires due diligence, research and asking questions. Knowing what questions to ask is crucial and that's where professionals can help.

Accept your capacity. Define your financial, emotional and physical capacity depending on what your project requires. Dream big, be imaginative but be willing to start small and in a way that is realistic for the resources you have access to. A home grows with its inhabitants, don't expect others to finish it for you in one go.

Stay true to you. Take the opinions of others with a grain of salt. Listen, but always ask yourself if the advice aligns with your values. We need more people making homes that are aligned with values for wellbeing, not homes that are geared towards resale and wealth creation.

Be realistic. Expect the process to take longer and for it to cost more than you think. Engage professionals that you share values with, so give it the time it needs. After all, most people would rather the biggest investment of their life be done well rather than cheaply or quickly.

This article represents the permaculture principle INTEGRATE RATHER THAN SEGREGATE. For more info go to page 99.

This page, clockwise from top Rethinking convention can be a more fulfilling way to live; Enoughness is about making the most of all the spaces; Jane's fresh approach is asking people to reassess what's 'enough' in terms of their individual climate, circumstances and lifestyle.

Italian Parsley
Curled Parsley
of Herb chicken roast potatoes
Sage + Marjoram
Flat leaf Parsley
Lemon myrtle
Pink Basil

Edible exchanges
GIVE AND TAKE

WORDS & PHOTOS BY DR KETAH SILVESTER

Rising living costs and broken supply chains have seen a resurgence in backyard food growing and with it, a return to local food swapping and increased community resilience.

Exchanges come in many forms. Be it a monthly crop swap at the local park, a roadside stall, mailbox seed library, skill sharing or swapping produce through social media, there are many different models in use. Whatever form it takes, the common theme is that no money changes hands. Instead it's about exchanging homegrown produce, reducing waste, sharing local knowledge and, most importantly, fostering a sense of community. Many people realised that growing your own food isn't as easy as planting something one day and harvesting great produce down the track. And after spending hundreds of dollars on soil, raised garden beds and seedlings during the pandemic, only to end up with tiny tomatoes or a handful of half-eaten leafy greens, many reached out to growers in their community for advice and found it at their local edible exchange.

GIVE AND TAKE

Regular local gatherings to share produce, or 'crop swaps', are particularly popular. These types of swaps are usually held once a month at a local park and the focus is very much on sharing your excess with the community. Swappers bring anything from homegrown produce, plants, seeds and seedlings to compost, manure, pots and the like. No money changes hands, just produce – other than that, there doesn't seem to be many rules, so long as both parties are happy.

Crop swaps are a great way to reduce waste and an economical way to expand your garden and grow a much wider variety of plants than you otherwise would. You're also likely to see some rare and unusual crops. So not only can you access produce and plants that may be hard to source elsewhere but you can also talk with the grower about how to grow and use them.

Regular swaps are also an excellent opportunity to meet like-minded gardeners and learn from their experience. We all love homegrown food but most people don't have the time to sit down to study food production. Sharing knowledge is a key aspect of crop swaps. Be it propagation, edible plants, pest control or water management, there is so much to be learnt from your local growing community. Not to mention the like-minded friends you will almost certainly make in the process.

'These swap groups have provided me with a wealth of knowledge about food growing and I've gained many new friends along the way,' says Jason Hauser from Ipswich Plant Swap and Booval Swap Cart. 'But the most rewarding aspect would have to be seeing my young children learning firsthand about sustainability as they experience it in action.'

The Brookfield and Mount Crosby Food Swaps in Brisbane's west have been running for seven and three years respectively. During this time, they have grown from a handful of locals gathering in the sunshine to several hundred members. These communities now grow a huge diversity of unusual, perennial and heritage edible crops thanks to the generosity of local swappers and their knowledge, seeds and plants.

SWAPS NEAR YOU

Community-based edible exchanges have been popping up all over the country during the last couple of years. In Melbourne there are plenty of monthly swaps to choose from including the Macleod, Eltham, Hurstbridge,

> Exchanging seeds with local growers has many advantages over store-bought seeds

PUMPKIN
SEEDS
PEAS
SEEDS

Mornington, Diamond Creek and Epping North Food Swaps.

In Canberra there is Herb Station Amaroo, although this is more of a pot swap and free community herb garden – or simply check out Crop Swap Canberra. In Brisbane, you are spoilt for choice. The Brookfield and Mount Crosby swaps have been around for years as has the edible exchange at Dayboro.

There are also online exchanges being organised all of the time through social media. These pre-arranged swaps are typically done through facebook garden groups. The model is simple; people post their excess produce and others make offers for a trade. The swap often takes place at the garden gate or a local swap event. Crop Swap Australia is a good place to see how this works.

EDIBLE EXCHANGE STALLS

Edible exchange stalls work on an honesty system, with a publicly accessible cart stocked by the local community. They often pop up out the front of people's homes or at the local community garden. Again, no money changes hands, people simply bring their excess produce and exchange them for something of equal value already on the cart. Edible exchanges are convenient ways for people who have produce outside of the monthly swaps to get involved.

Those who run edible exchange stalls talk of a real sense of joy in being able to share bountiful homegrown produce with friends and neighbours, especially when the supermarket shelves are bare, or produce is expensive.

Some, like the generous Froggy Creek Community Street Library and Edibles Exchange run by Vicky Mills in western Brisbane, feature collection boxes for donations to worthy causes such as school gardens, people in need or for propagating vulnerable native plants.

Exchange stalls are an inspiring example of community goodwill but there is a lot of work going on behind the scenes. According to Katie Irwin from Eatons Hill Edible Exchange, navigating her way through red tape as the popularity of the stall increases is one of the biggest challenges with exchanges.

'Things like food safety regulations, land use, insurance – even things like fire ant biosecurity laws,' Katie says.

As with society at large, there will also always be those who take more than they give or think that because no money changes hands that the items in these stalls are free. But, as Vicky is quick to point out, 'taking is not swapping.'

SEED LIBRARIES

Seed libraries are a place where people can share well-labelled saved seed within their community. They can usually be found at libraries, crop swaps, edible exchanges or just out the front of people's homes around the neighbourhood. Again, they work on an honesty system, and allow you to exchange your own saved seed for something else.

Exchanging seeds with local growers has many advantages over store-bought seeds. Seeds are often homegrown, open-pollination varieties rather than sterile F1 varieties, which will thrive in the local area. Locally grown seeds are usually at least a few generations old and have often been naturally selected to have the best fruit or the most resilient plant. These neighbourhood seeds are very well suited to the local climate and conditions. Of course, it is still important to plant annuals seasonally, but you are off to a good start following in the footsteps of other successful local growers. There may be some cross-pollination, particularly when it comes to cucurbits, meaning that you could end up with some very unusual pumpkins, for example, but locals say that that is just part of the gardening adventure.

COMMUNITY BENEFITS

The benefits of community swaps extend far beyond reducing waste and easing the cost of living. They bring joy, friendship and a sense of connection. Money-free swaps and the relationships made through sharing not only leads to a sense of community, but is paving a genuine and important way for future generations. ›

FROGGY CREEK EXCHANGE
Native

WATER
for cutting
and plants

Lavender
Spring onion

Opening page As well as a fresh produce, Eaton Hill Edible Exchange includes a library, a compost hub, a tree swing and even resident rescue chickens. **This page, from top** Vicky Mills and her popular stall in Queensland's Karana Downs; Not just edibles, street libraries are a popular addition; Give what you can and take what you need; Stalls are always changing with the seasons. **Page 76** Community-made compost.

> Our children are young but already they love the garden and understand the importance of growing food

How to Compost
Greens (Nitrogen)
Browns (Carbon)
I am the BROWNS BIN

Anna Fawcus from Samford Edible Exchange says her children are learning about the power of a resilient and connected community which can support itself.

'Our children are young but already they love the garden and understand the importance of growing food, supporting local and caring for the environment we live in,' Anna says. 'We love the connections created within our community, the shared knowledge and being a part of this beautiful catalyst for people to learn more, grow more and share more.'

During the lockdowns and, more recently, the 2022 floods in Brisbane, there were numerous examples of communities pitching in to help maintain productive gardens or deliver hot meals while people were in hospital or isolated. The Froggy Creek Exchange started in response to the isolation lockdowns but was spurred on by the 2022 flood events which left their community isolated for up to a week. Wanting to extend a helping hand to others led the community to share pantry staples and freshly grown produce from a roadside cart. The exchange grew from there and is now a focal point for the community.

'I love nothing more than seeing a rushed person arrive and leave calmer, a child arrive and learn something new or just grow in confidence by the simple lesson of learning to share, or the hungry person arrive and be able to take the free food donated by Foodbarn,' adds Vicky.

Katie agrees and says the development of relationships and a sense of community is the aspect of exchanges she finds the most rewarding.

'The greatest benefit of our exchange is the ability to build community and share knowledge,' she says. 'Seeing community members be cared for and supported by their neighbours is very humbling.'

Get involved

FANCY INSTIGATING AN IN-PERSON COMMUNITY EXCHANGE? HERE'S WHERE TO START

Requirements are going to vary between states and territories, but a good place to start is to check your local council guidelines and Food Safe Australia to see what the legal requirements are in your area. There are restrictions around cut produce, eggs, milk, preserves and even body products that need to be considered.

Ask neighbours and friends if they'd be willing to support the initiative and together decide what you really want to exchange, so you can make the rules really clear. A lot of successful edible exchanges start off as seed swapping, a box of excess lemons at a mailbox or friends meeting once a month at the park to talk about and share plants.

'The main piece of advice I would give to people wanting to create their own neighbourhood exchange, would be to find a team of like-minded locals first,' says Katie. 'Work with the community from the beginning throughout the whole development phase, don't try and introduce it to them as a finished product and expect them to take ownership of it.'

This article represents the permaculture principle PRODUCE NO WASTE. For more info go to page 99.

COURSE PROVIDERS

Immerse yourself in permaculture and self-sufficient living through informative courses like these.

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Join Hannah Maloney & Brenna Quinlan for a Permaculture Teacher Training course (April); immerse yourself in a PDC with David Holmgren (April/May); participate in an Open Day or various workshops on a certified organic permaculture farm.

www.foodforest.com.au (08) 8522 6450

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www.thepermapixie.com

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www.byronpermaculture.org.au (02) 6684 3374

MICK'S GARDEN SHED

There's something for everyone at Mick's Garden Shed in the Blue Mountains, NSW. There's Earthworks with Doc Spice, Food Forests with Aaron Sorensen, Small Seeds Big Feeds with Eric Brocken and Sustainability Saturday with Mick Connolly.

www.micksgardenshed.com.au 0455 064 936

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www.milkwood.net/courses

ROBIN CLAYFIELD'S DYNAMIC GROUPS

Held at Crystal Waters Permaculture Ecovillage in southeast Qld, Robin offers a wide range of permaculture and leadership courses. Next up is Social Permaculture (11–12 Feb), Crystal Waters Co-op PDC (19 Mar–2 Apr) and Teacher Training (23–28 July).

www.dynamicgroups.com.au (07) 5494 4707

DIGGERS EDUCATION PROGRAM

After a two-year hiatus, Diggers has relaunched its education program. Covering all aspects of sustainable and organic gardening, the onsite programs kicked off in spring, backed up by a large library of online tutorials.

www.diggers.com.au/education

permaculture

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www.permacultureeducationinstitute.org

Amy Fabry-Jenkins

Food justice

ODE TO OAKHILL

WORDS BY NICK ROSE & KEL BUCKLEY

A once vacant and decrepit vicarage in Melbourne's inner-north suburb of Preston is now home to Oakhill Food Justice Farm, a community space and urban farm empowering members with knowledge, skills and stronger social connections.

Situated 9 km from the CBD, Oakhill Food Justice Farm is the second such initiative of not-for-profit organisation Sustain. In the past 17 months and with the help of staff and volunteers, Sustain has turned a run-down churchyard into a thriving hub which educates, feeds and nurtures its community.

'This place-making initiative demonstrates the power of urban agriculture to create beautiful places of nurturing and healing for people, plants, soil, birds and bees,' says Sustain's executive director Nick Rose. 'Oakhill is central to Sustain's mission to expand urban agriculture across Australia.'

The initiative is a great example of what's possible when access to appropriate land and facilities can be combined with adequate funding. While volunteers play a large and important role at Oakhill, funding enables the recruitment of skilled staff, allows the farm to offer educational programs to kids, a paid-internship program to youth and means its community-focused goals can be reached more efficiently.

According to Nick, more than 1000 people have visited the Oakhill urban farm site and engaged with it in a variety of ways, and he says the potential and positive impacts are growing on a weekly basis.

PASSATA PATCH PROGRAM

During the 2022 school year, each term more than 700 students and teachers from Preston Primary School participated in Oakhill's Passata Patch Program. Run by Oakhill farmer and therapeutic horticulturalist Sharni Shafrir, the program provides participants an opportunity to experience urban farming and food growing, and to connect with nature throughout the changing seasons.

'The program works around local Wurundjeri seasons, recognising the traditional custodians of the land and the wealth of information in their long-term observations of nature,' Sharni says. 'Students have been very enthusiastic on their visits. Asking questions about the various plants growing on the farm, and always keen to taste leaves, flowers, seeds of edible plants they are unfamiliar with.

'As well as growing tomatoes, classes have been collecting paper and food scraps for composting, some received freshly sown punnets to grow seedlings, and all have been coming back with stories of growing more vegetables at home.'

WURUNDJERI WOI WURRUNG LAND

As well as establishing productive food gardens, supporting education, providing a space for the community to host workshops and events and working around Indigenous seasons, where it's appropriate, Oakhill Food Justice Farm shares stories of Country.

'We do this in our passata patch program and through our internship program,' says Nick. 'Learning about Wurundjeri seasons with the students has helped us connect to the place where we live and grow. I find it inspiring and reassuring to observe the climatic differences across the many seasons, instead of getting grumpy when summer hasn't arrived on the first day in December.'

He is also sensitive to the fact that culture and knowledge is intellectual property.

'Not all of these stories are for us to share or for us to know,' he says. 'As a settler on stolen land, I continue daily to learn of the ongoing struggles of First Nations peoples and the traditional owners where I live and farm, and try not to burden Elders and activists in our solidarity efforts.'

FOOD JUSTICE INTERNSHIPS

With Nick's experiences around the ethics of unpaid internships and farming below the minimum wage, it seemed only right to him that a food justice farm must have a paid- ›

> It seemed only right to him that a food justice farm must have a paid-internship program

internship program. Still very much in development and what Nick describes as ‘a long way from perfect’, Oakhill secured grant funding from the local council and philanthropic organisations in order to facilitate paid internships for 10 farmers in two rounds to convert areas of lawn into productive food-growing spaces on the farm.

Nick says it’s about everyone having access not just to nutritious food but also the knowledge of how to grow it. Elliot went through Oakhill’s internship program and has since gained employment at the farm.

‘I was able to develop my skills and confidence and ask for support as needed, which was a nice contrast to the many health challenges that had previously occupied my daily life,’ he said. ‘Growing with community at Oakhill has enriched my understanding of what it means to participate, share boundaries, manage conflict and continue to give and receive care in a collective manner.’

VOLUNTEER COMMUNITY

Oakhill runs weekly volunteer sessions with a focus to grow food for the community, which Oakhill mostly distributes directly to Darebin Information Volunteer and Resource Service (DIVRS) and its food relief program.

As well as a weekly harvest and wash and pack process, volunteer sessions include hot composting, utilising spent straw from local mushroom farms and food scraps from organic wholesaler CERES Fairfood. They also distribute organic compost from Clydes Compost to community members, grow seedlings, build gardens, create art and run a wide range of events to share knowledge and the joys of growing together.

Oakhill resident, volunteer and urban farmer assistant Emma Belle says as well as the skills and confidence she’s gained, she feels privileged to witness the enjoyment others are getting from learning and sharing skills and stories.

‘Being part of the Oakhill community is a wonderful gift; I have been able to grow food for the community and participate in direct action in making food accessible to people on low incomes,’ she says. ‘Being part of an organisation that is invested in breaking down the financial barriers to food has been wonderful because it aligns with my personal values of addressing systemic wealth inequality and makes food accessible.’

FOOD JUSTICE

Oakhill community farmer Jemma Stefanou applied for a job at the farm after seeing the work parent company Sustain was doing to support Palestinian Agropreneurs in their quest to feed their communities in Gaza.

‘I feel enraged at the injustices experienced by First Nations communities and their ancestors around the world and the lack of recognition of land rights and sovereignty,’ she says. ‘I am inspired by First Nations, disabled and LGBTQI+ community resilience, survival and truth-telling and I feel compelled to listen and act when called upon.

‘I feel strongly about providing safe and welcoming spaces for people within these communities to come together and access knowledge, to care for the land and each other. That has been my main goal of working at a food justice farm.

‘Farming is my way of expressing myself, and feeding people is my way of expressing love.’

Who’s Sustain?

Based in Melbourne, Sustain - the Australian Food Network is a national network of organisations and institutions working towards developing and implementing practical solutions to food-system problems. Sustain’s vision is to transition to a localised food system that supports communities, individuals and ecosystems.

Oakhill is just one of a number of projects including the Melbourne Food Hub, World Food Garden Project, Cardinia Food Circles, Women-owned Farms of Gaza, Food Business Boost and the Australian Food Systems Directory, to name just a few.

Sustain is a registered charity and donations can be made at www.sustain.org.au

This article represents the permaculture principle USE AND VALUE RENEWABLE RESOURCES AND SERVICES. For more info go to page 99.

Ninna Mar

Shani Shafrir

Nick Rose

Veronica Graham

Opening page Farmer Jemma Stefanou believes in the cause and gains a lot from her involvement **This page, clockwise from top** From old shed and driveway to a space to connect and a thriving food garden; It's not all hard word at Oakhill; Nick (second from left) with some of his dedicated team; The students of nearby Preston Primary School in their Passata Patch – Shani runs a holiday program for the kids, too.

Medicinal sovereignty
HERBAL HOMESTEADING

WORDS & PHOTOS BY TAJ SCICLUNA

Food sovereignty, resilience and security has been long discussed, however medicinal sovereignty is crucial to the health of both humans and ecosystems. From our own gut microbiota, to the bioregions worldwide, medicinal plants play an essential role in recovery and repair.

Of the estimated 400,000 species of edible plants worldwide, on average most western diets consist of 30 species alone, most of which have been cultivated for modern diets. So not only are we missing out on important nutritional diversity, the types of plants which have been cultivated for our modern diets are heavily lacking in nutrient density. Food as medicine is simply not enough, as the varieties to choose from do not have the robust nourishment we require for true vitality and preventative measures against disease. It is medicine as food which we have lost, the more wild-cultivated species which are still rich in phytochemical nutrients which are necessary for us to thrive.

TRADITIONAL ROLES

It is no coincidence that many traditional dishes we consume today use medicinal herbs and spices for flavour – the tastes we are now accustomed to have their roots solidly in herbalism, and for good reason. Many aromatic spices (cumin, coriander, rosemary, oregano, sage, etc.) have antimicrobial effects and were conventionally used in cooking to ensure pathogens were kept at bay. These aromatics also have been said to trigger a 'rest and digest' state to allow the body to absorb nutrients more easily.

Commonly, bitter greens were used as a side salad before meals to promote digestive enzymes and stomach-acid production. Dandelions, chicory, wild mustard and radicchio were frequently incorporated into cuisine in the Mediterranean basin, the bitter compounds preparing our digestive tracts for richer and heavier foods. We see consistently in cultures from Europe, the Middle East, Asia and India, the use of warming aromatics after meals, such as cardamon, coffee, rose, fennel, liquorice, star anise and nutmeg to name a few.

Desserts and liquors that were often devoured after meals include these herbs and spices, which have what is known as 'carminative' effects, relieving gas and bloating due to hindering fermentation in the gastrointestinal tract. The aromatic oils in these familiar botanicals are responsible for assisting the assimilation of our food.

Plants such as sage are traditionally incorporated into rich, fat-laden dishes, and although these pair well culinarily speaking, the compounds activate receptors in our bodies that help us clear fatty acids from the bloodstream. The herbs and spices commonly partnered with foods work on a biochemical level that promotes flavour, as well as fulfilling a variety of evolutionary therapeutic functions. This is not coincidence, but generations of our ancestors carefully selecting botanicals rich in compounds beneficial to our health.

THE SCIENCE

The compounds we are discussing are called phytochemicals, or plant chemicals. Phytochemicals can ›

> Train your body to love bitters, and you will decrease sugar cravings and improve digestion

be broken into two categories; primary and secondary metabolites. The former is comprised of carbohydrates, lipids and proteins, all compounds essential for growth and development. The secondary are family-, genus-, species- or plant-specific, and are involved with defending against microbial and herbivory attack and responding to stressors such as light, temperature and water. These secondary phytochemicals are responsible for medicinal compounds, including the aromatics and the aforementioned bitters.

NOT JUST HUMANS

It is important to note that the function of medicinal herbs is not limited to the human-centric therapeutic effects. These compounds play a significant role in ecosystem health, too, which is a reflection of what they offer us on an internal level. Ranging from antioxidants, bitter alkaloids, volatile oils and more, these medicinal plants provide insects and animals with not only nutrients, but a phytochemical cocktail that allows cell-regeneration and preventative measures against disease.

Herbs add a hardiness and resilience to our garden systems, providing nectar, habitat, breeding grounds and nutrients to animal and insect life, assisting in integrated pest management and allowing us to co-create robust gardens based on ecological stability.

Medicinal plants have not undergone the same cultivation processes as our commonly ingested vegetables, meaning their phytochemical content is still wild and intact, providing us with many diverse nutrients that can supplement our western diets.

DIET DIVERSITY

Changing the way we think about food can be difficult – we are habitual creatures and food can be grounded in culture and comfort, or at the least be a fuel source as we hastily move from one task to the next.

However, there are effective ways to ground ourselves in the rhythm of nature and gather wild herbs for a more medicinal cuisine. By doing so, you'll harness the phytochemical diversity of your bioregion and bring essential nutrients into your home.

Train your body to love bitters, and you will decrease sugar cravings and improve digestion. Making salads using dandelions, yarrow, angelica, sow thistle and chicory will activate your bitter receptors, stimulating the vagus nerve to communicate with your digestive organs.

And don't skimp on the herbs in dishes – add large bunches of mint or lemon balm to summer salads, sage or oregano to grain salads or Vietnamese mint or coriander to stir fries. It will take a while to adjust your palate, so use smaller amounts finely chopped at first and increase.

VINEGARS AND OILS

Vinegar is great at extracting minerals, so creating herb-infused oils and vinegars (see recipe) is a great way of increasing the phytochemical density of your diet. Herbs which lend themselves to this application are many and varied, but there are a handful of standouts.

Dandelion leaves are beneficial for kidneys and for supporting metabolism in the body. Highly nutritious, this plant is high in iron, magnesium and calcium, as well as vitamins A, E and D. Stinging nettle is a nutritive, which means it is high in both minerals and chlorophyll, and one of the best herbs for nourishing the blood and assisting recovery from physical and emotional trauma.

Cleavers (Pip Issue 26) is another great one – picked in the spring when the plant is not as prickly, this mineral-rich herb supports both the lymphatic and immune systems, while oatstraw is high in calcium and has restorative benefits for the nervous system. Pick the green stems and tops before they dry out, and chop finely.

INCLUDE AND IMPROVE

It is only in the last century or two that we have diverged from the diversity our bioregions provide, by minimising nutrient density with modern agricultural practices and western diets, we have seen a rise in illness and disease. Food sovereignty is not enough, if we are going to co-create community resilience and flourishing systems, medicinals must be included to facilitate health justice, for human ecosystems and beyond.

Bitter greens pesto

INGREDIENTS

2 handfuls of greens (dandelion, chickweed, nettle, sow thistle, wild brassica, etc.)
1.5 cups olive oil
¼ cup apple cider vinegar
2 tbsp savoury yeast flakes
1 tbsp salt
1 tsp pepper or chilli
½ cup sunflower seeds
½ cup pumpkin seeds

METHOD

Wash the greens thoroughly, place in a blender with all other ingredients except the seeds and pulse lightly. Add the seeds and blend until seeds are broken up, ensure to retain a rough pesto texture. The pesto will keep for two weeks in the fridge, but to increase shelf life add more olive oil.

Herbal-infused vinegars

INGREDIENTS

For fresh herbs

Two parts vinegar to one part fresh herbs (fruit, herb, root, bark or a blend)

For dried herbs

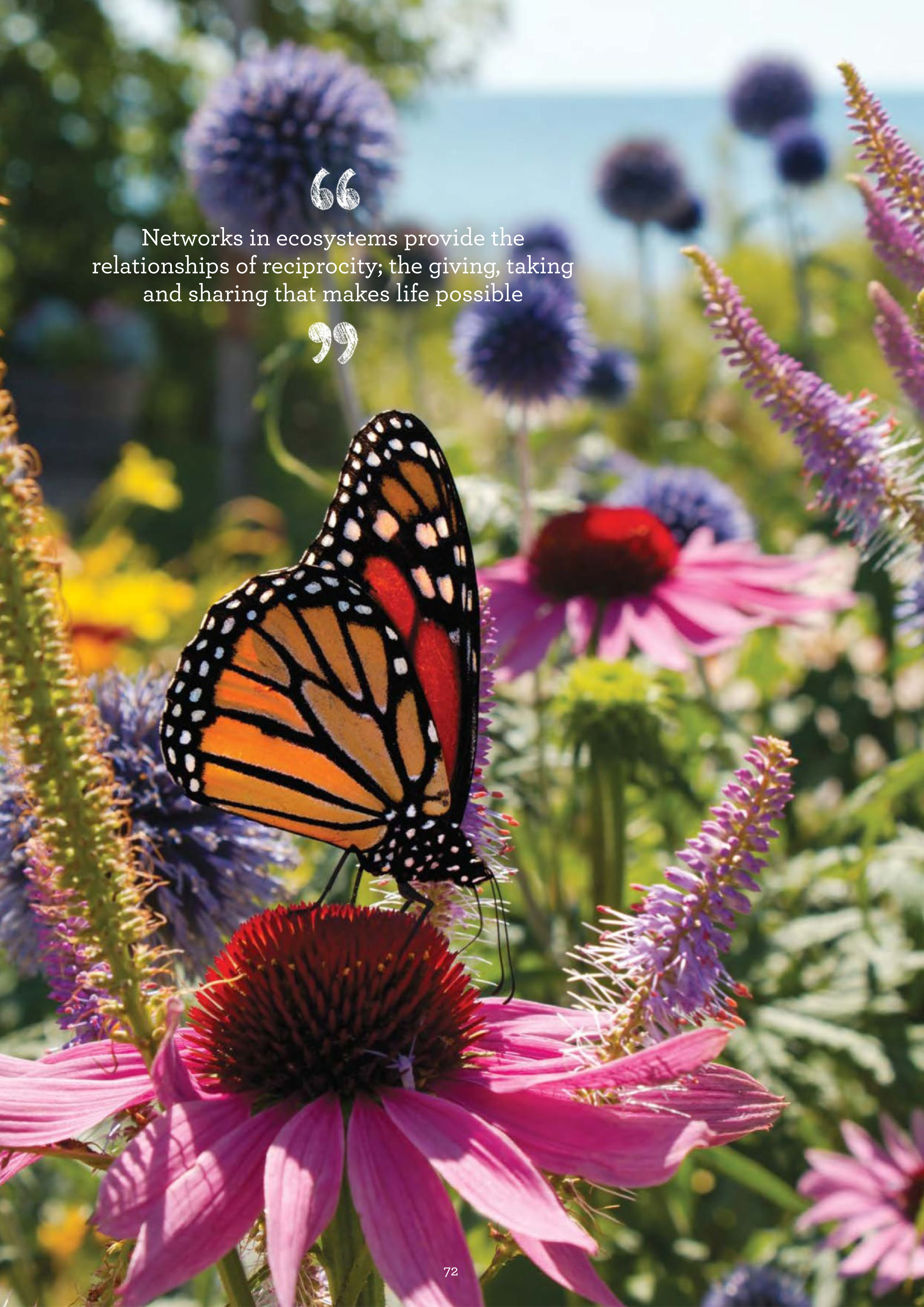
15 parts vinegar to one part dried herbs

METHOD

Place the appropriate amount of plant material in a jar (roughly chop denser plant material for a more potent result) and fill with vinegar. As vinegar will corrode a metal lid, instead cover the opening with baking paper and secure with a rubber band.

Label and date your jar and store in a cool, dark place for two to four weeks, ensuring all plant material is submerged. This can be done by using a weight or shaking daily. Strain your vinegar before decanting into a bottle for use.

This page, from top Drinks are a great place to start incorporating more herbs in your diet; Herbs can be as aesthetically beneficial to dishes as they are medicinal; Infusing herbs in vinegars and oil is an excellent way to extract the vitamins and minerals.



> “Networks in ecosystems provide the relationships of reciprocity; the giving, taking and sharing that makes life possible”

Permaculture
NETWORKS IN ECOSYSTEMS

WORDS BY ROSEMARY MORROW **ILLUSTRATIONS BY** ROB ALLSOP

An ecosystem is a community of organisms interacting with each other and with their physical environment. It functions as a complex, self-sustaining natural system that meets its needs without waste.

'The ecological imperative' states that humans are part of ecosystems, and must acknowledge their interrelationship with and interdependence upon such systems. Permaculture follows this imperative, to integrate and transform human societies so they can live in sustainably designed and highly productive ecosystems. In such systems self-interest is aligned with the common good. For these reasons permaculture is often called 'the cultivated ecology'.

Networks in ecosystems provide the relationships of reciprocity; the giving, taking and sharing that makes life possible. And it's our ethical task to design ecosystems that optimise the number of productive species, use energy and matter effectively and move towards ecosystem stability and perpetuation.

When designing systems in our own lives, our ecological aims should be to preserve genetic diversity, respect the right to life of all species to contribute to ecosystem structure, allow ecosystems to evolve under changing conditions and to use species and habitats sustainably so the essential life-sustaining processes can continue intact. Because if we don't have ecological design aims we run counter to basic, and often unknown, laws of nature with serious consequences – it's like taking the bottom out of a pyramid, destructive effects multiply and affect other connected systems.

SELF-REGULATING ORGANISM

The Gaia theory was developed by nuclear scientist James Lovelock in the 1970s. He hypothesised that the earth could be understood as one entire living super-organism evolving over the vast span of geological time. Like other organisms, it is essentially self-regulatory and keeps itself in good health.

In his theory, he suggested that the Earth has various systems: forests are like the kidneys filtering and cleaning water; oceans are like the lungs; rivers are like the circulatory system; and rocks are like the bones. These are critical to its survival and health, and when systems are destroyed, the life of the organism is severely threatened. Each organ is intimately related to all others, and disease in one affects the others. So, for example, destruction of forests causes imbalance in the Earth's atmosphere and hydrology.

Organs can only take so much damage before they reach a critical point and collapse. Lovelock suggests that when forest cover falls below 30 percent of the earth's surface, then other systems will fail. In permaculture, we set goals to clean water, protect rivers and maintain and create at least 40 percent permanent tree cover.

The Gaia theory is used among climate and ecological scientists. Accepting the Gaia theory means auditing, monitoring and regulating our consumption of resources and disruptions to major biomes as they affect ecosystems.

THE SCIENCE OF NETWORKS

Network science has recently been revived by ecologists and sociologists. It explains the complexity and stability of ecosystems. Science until now has taught us about entropy; basically, the universe, left to its own devices, will degenerate and tend towards ever-greater discord and randomness. And yet in permaculture we also see systems that do the opposite; they drive themselves to an ever-greater development of patterns and complexity, as happens with the evolution of ecosystems.

We can go from a disconnected randomness to a world in ›

> “The edge where two or more ecosystems meet, known as an ‘ecotone’, is extraordinarily rich and productive”

which everything is connected. For example, in composting, a series of diverse items are brought together and with natural processes connecting them result in a different identifiable product, humic acid.

According to network science, integration and complexity rely on being synchronous and connected. Scientists have found that pairs and trio-links start first and grow with more links to nodes. Then, with more links, a large 3D network called a ‘cluster’ can emerge. So, we go from a stage of disorder, of chaotic motion, to order, where all elements are linked in some way. The point at which that happens is called a tipping point, or phase transition. Zero degrees Celsius is where all the molecules in water rearrange to form ice, the tipping point. Molecular nodes and clusters enable this. Everything is a network: knowledge, epidemics, nutrient cycles, electricity grids, crickets chirping, nervous systems and roads.

NODES AND LINKS

The network structure is super-efficient at passing information on and helps us understand why and how structures collapse. Take out a node with a high number of links and you get cascading failure – the system collapses. This explains why, if you take out a keystone species such as bees, ants or certain plants, a system will rapidly degrade.

So in a garden or on a farm, some species are nodes and others are links. The daisy family, which many insects visit, is a node and bees are its links. What will happen if nodes are destroyed or not included in a design plan? How do we make nodes and then link the nodes? We only know a little, but what we do know we use in our designs.

Nodes and links have always intuitively been part of permaculture design, which creates links between species, especially keystone species. Network science gives us a clearer concept and the language to include in our design thinking. We know that it is not the number of species as such that is important, but the number of links between them. A garden pond is a node with many links – lizards, frogs, spiders and other insects, birds – and plants need these to carry out their functions in ecosystems.

ECOSYSTEMS BY DESIGN

Natural ecosystems meet their own needs. They supply pest management, nutrients for species, temperature control, soil building and maintenance, wind control, pollination, germination and pruning. They don’t need human management or inputs. A well-designed mature permaculture system approximates a closed system in meeting as many of its needs as possible. In permaculture you set up nutrient cycles. By using animals, compost, mulches and a selection of plants, you widen the range of materials being cycled and, in some cases, speed up the process.

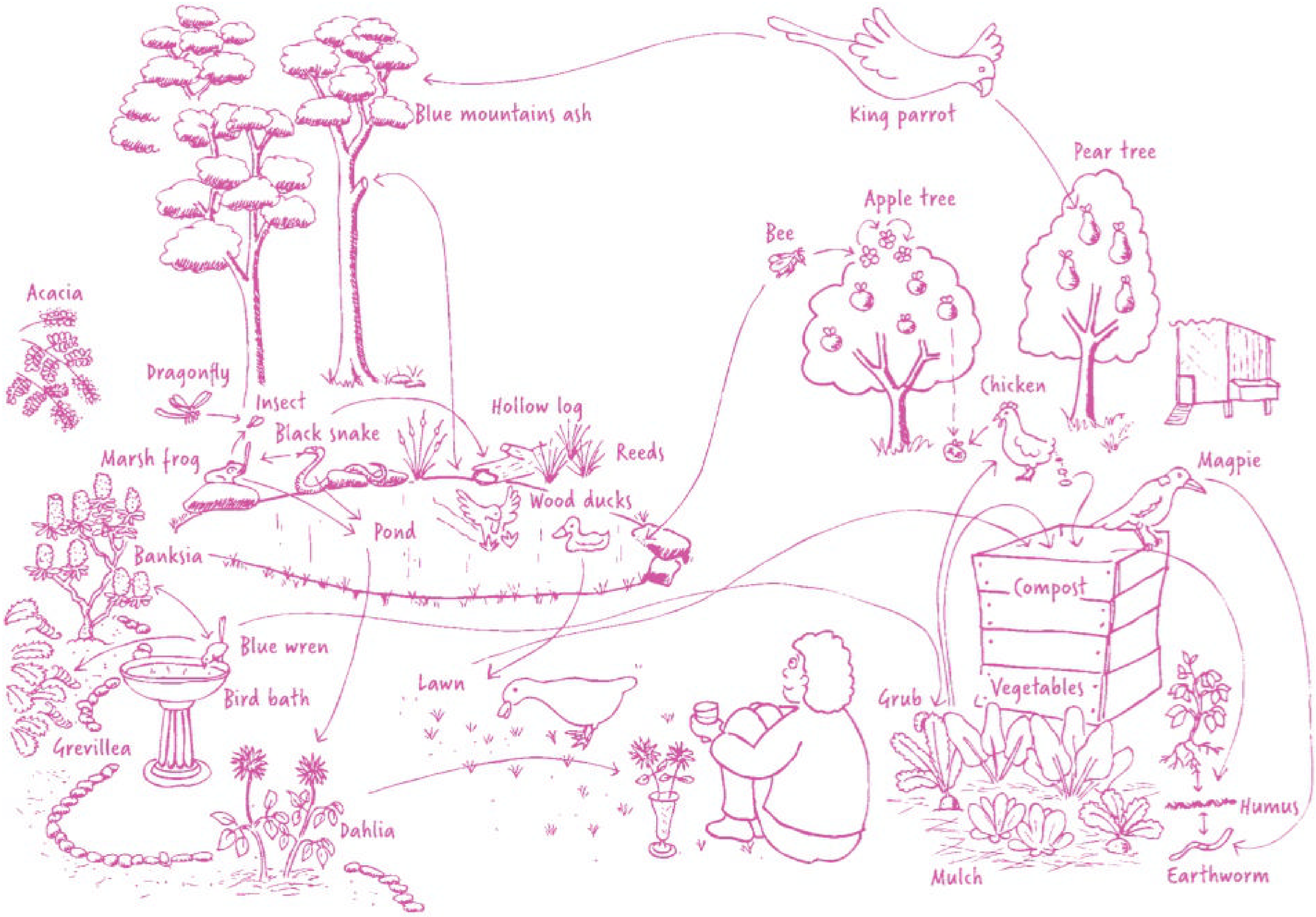
The edge where two or more ecosystems meet, known as an ‘ecotone’, is extraordinarily rich and productive. Take the estuary where the ocean meets the land, or the edge where rivers meet land, or where the road meets the bush. At each of these, there are many more overlapping factors from each ecosystem, such as water, temperature and species, than in the middle of each ecosystem itself.

Ecotones impact on harvesting and design. Pest management, weed control and our relationships with wildlife are also affected. In permaculture, we try to increase edge effects to create more microclimates through designing wavy edges to garden beds, aquaculture systems and greywater delivery techniques.

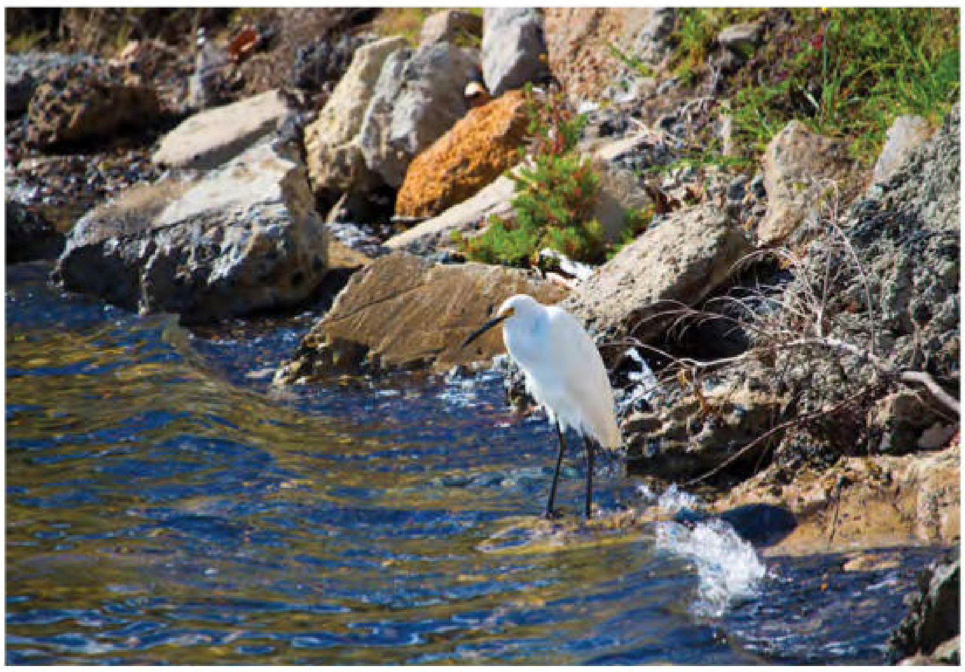
GUILDS AND RELATIVE PLACEMENT

In permaculture, a ‘guild’ describes cooperative groups of species that support each other and thrive when grown together (Pip Issue 23). Usually, they have evolved in the same place and under the same conditions, for example, beans, corn and pumpkins support each other. Guilds also occur in wild systems. Acacias and eucalypts grow well together; legume and cabbage families help each other thrive. In one Indigenous language this concept is described by the word *waru*. The bird, the worm, the tree and the spider all form a *waru*.

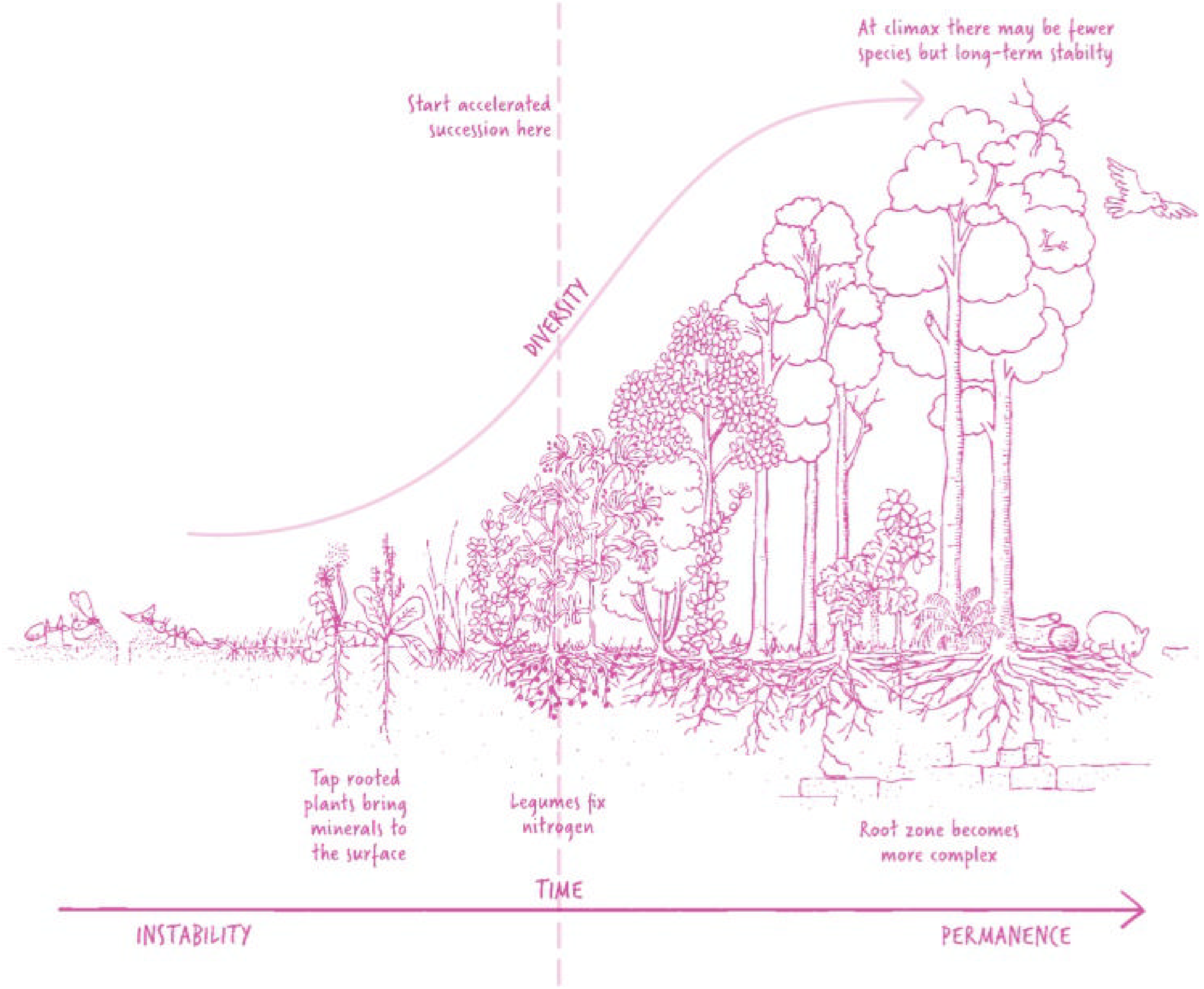
When you place elements so they are mutually beneficial to each other and other parts of your design, this is called ‘relative placement’. For example, when you plant your vegetable garden close to your kitchen where you walk through it every day, you will look after it better and harvest it more often. You can keep your compost bin there and send recycled water to the area. When all positions save time, work and resources, the relative placement is effective. If your vegetable garden is in one corner and your compost far off in another, the relative placement is poor and you will work harder. ›


Blue mountains ash
King parrot
Pear tree
Apple tree
Bee
Acacia
Dragonfly
Insect
Black snake
Hollow log
Reeds
Chicken
Marsh frog
Magpie
Wood ducks
Pond
Banksia
Compost
Blue wren
Lawn
Grub
Vegetables
Bird bath
Grevillea
Dahlia
Humus
Mulch
Earthworm

Hannah Maloney



Opening page No single thing is more important than another in an ecosystem. **This page, clockwise from top** We can design ecosystems to look after themselves; A balanced system has the ability to successfully manage pests; Naturally formed 'edges', like where the ocean meets the land, are hugely productive ecosystems; A fruit tree guild is a simple but effective example.


At climax there may be fewer species but long-term stabilty
Start accelerated succession here
DIVERSITY
Tap rooted plants bring minerals to the surface
Legumes fix nitrogen
Root zone becomes more complex
TIME
INSTABILITY
PERMANENCE

> As a designer you will learn to look at landscapes and say where they stand in the process of successional stability

SUCCESSION AND LIMITING FACTORS

Earth's huge range of ecosystems each have different pressures known as 'limiting factors' acting on them. These can be temperature, rainfall, soil, day length, altitude and distance from oceans. Such factors tend to reduce, inhibit or slow down growth. Climate is the main determinant of the vegetation of an ecosystem and soil is generally second in importance. Humans are also a major limiting factor through their burning, clearing, cutting, polluting and other short-term exploitative activities. As a result, you will see few natural ecosystems along the succession continuum, because they have been destroyed.

After a natural or man-made disturbance, the ground may be bare. This will be colonised by weedy plants and grasses, which will be succeeded by herbs, shrubs, small trees and bigger trees, then finally, a forest. This process is called succession. Succession happens because each type of plant changes the nutrient levels in the soil, and creates new microclimates, preparing the system for the next plant types.

Any disturbance drives succession backwards. On the other hand, as more species are added, ecosystem stability is strengthened. As a designer you will learn to look at landscapes and say where they stand in the process of successional stability. You will also analyse the limiting factors preventing such landscapes reaching their greatest stability. Each stage of succession can be an ecosystem with degrees of stability depending on the limiting factors

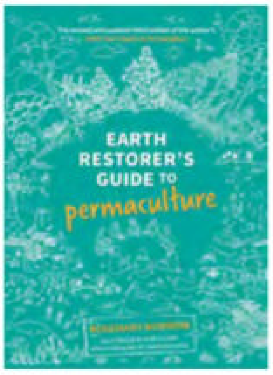
RESTORING DIVERSITY

Industrial agriculture drives diversity and stability backwards and destroys the natural links and relationships among species. In permaculture you design to restore diversity and stability by starting successional planting with species of plants and animals that do well in your region.

As designers, you can take a short-cut through the stages of succession (which might otherwise take years) by omitting the early stages. Start with nitrogen-fixing species – in a kitchen garden, they will be peas and beans. In a temperate food forest they might be acacia, cassia or broom, and in a tropical region you could use Leucaena, Gleditsia or Sesbania. Use local species where possible; every ecosystem and climate has nitrogen-fixing species suitable for accelerated succession.

When restoring and regenerating landscapes, you design to moderate the limiting factors. Your goal in designing sustainable landscapes is to move as far along the time axis, and minimise disturbance as much as possible by moving towards permanence. Just remember that every ecosystem is embedded in other ecosystems and does not exist alone. What you design will impact outside the site you are working on and, in turn, will be impacted from outside.

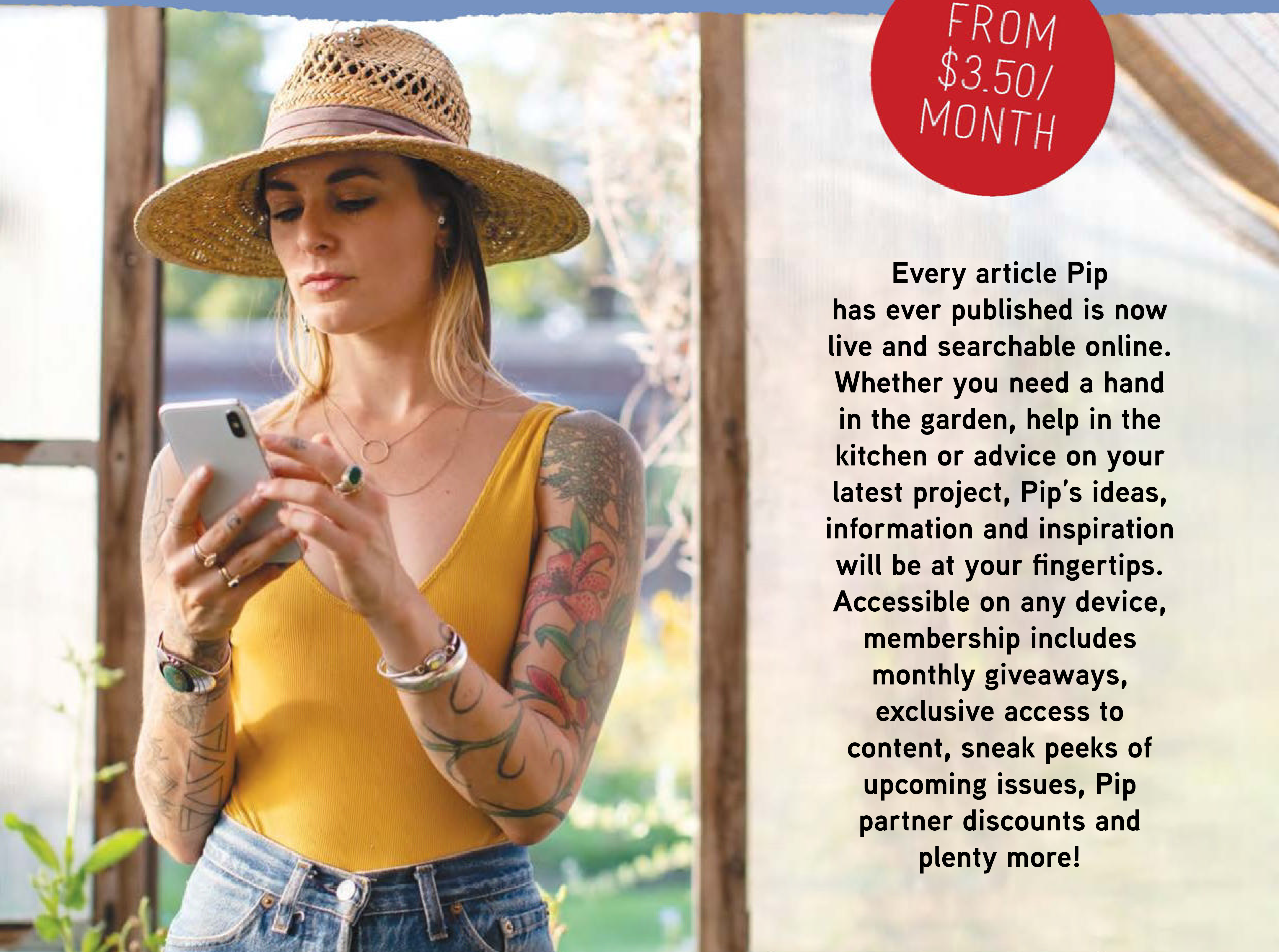
With a study of ecosystems (ecology) came the understanding of connectivity of elements and their dependence upon each other. When you recognise an ecosystem and see the points of disruption or breakdown you have some understanding of where and how to start restoring and rebuilding it. ■



This is an edited extract from Rosemary Morrow's latest book *Earth Restorer's Guide to Permaculture.*

This article represents the permaculture principle DESIGN FROM PATTERNS TO DETAILS. For more info go to page 99.

PIP IN YOUR POCKET AND ON DEMAND!



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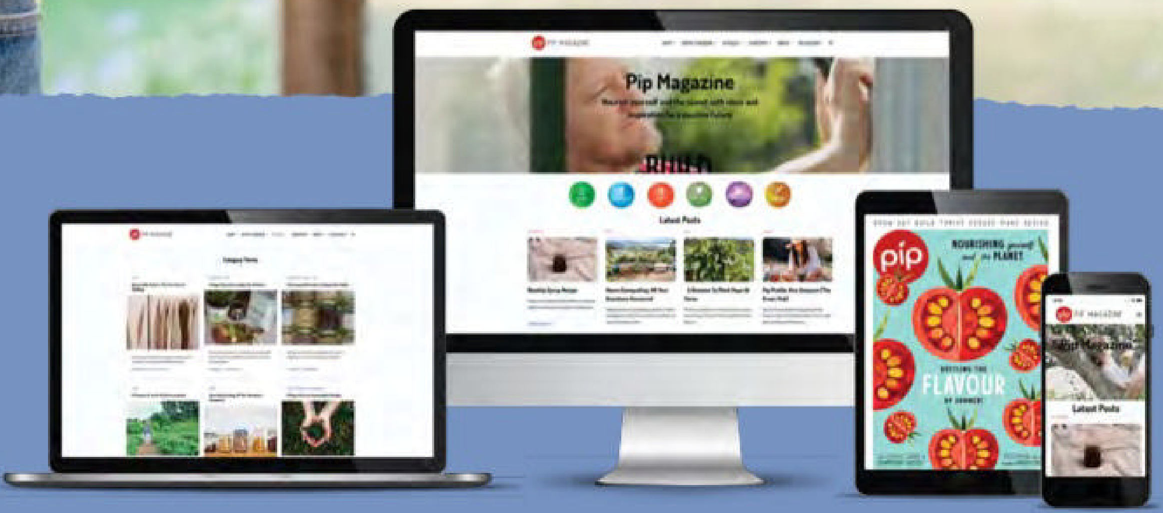

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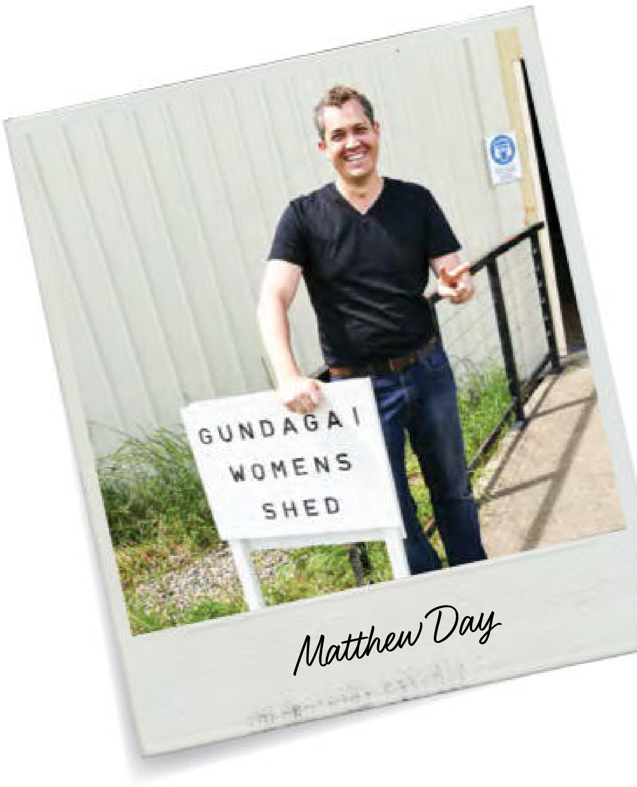

Matthew Day

Creating connections
SHEDDING TRADITIONS

WORDS BY MATTHEW DAY & KEL BUCKLEY **PHOTOS BY** MATTHEW DAY

The words Men's Shed conjures up images of old blokes tinkering away their days with bits of wood. And for many such sheds around Australia, this is true. But there's a shed in country New South Wales prioritising gender inclusiveness, sustainability and growing food for the community, and it's all the better for it.

It was 2017 when Matthew Day was asked to take on the role of secretary at the Gundagai Men's Shed. The former committee had been disbanded and the place was in debt. Aged just 32, he reluctantly agreed, agreeing to step in until someone more appropriate could take over.

It wasn't all bad. Aware he'd missed the opportunity to learn skills from his own grandfathers, he conceded he could probably do with the hands-on mentoring that came with it. And as a long-term renter, he could see the benefits of sharing tools, a workspace and resources.

BOUNCING BACK

Matthew knew the answer to making the shed a more resilient entity was in growing its member base.

'There were women in our community who wanted to learn [wood-working skills] when they were in school but had never been given the opportunity or encouraged,' begins Matthew. 'We set up a Women's Shed day with some male mentors available should they need them. And as it happened, we would end up needing them more than we could have possibly foreseen.'

The pandemic hit all men's sheds very hard. Many sheds lost members who simply didn't return. Others, like Gundagai, didn't have many members to begin with. Had it not sought female members before the pandemic, Matthew is certain the shed would have folded.

'We greatly respect our Women's Shed members for saving our shed,' adds Matthew. 'Their problem-solving, creativity and their leadership on the committee has been invaluable in getting us through our greatest challenges.'

People play a crucial part in defining a shed, but so too does its contents. These determine the capacity of a shed and the breadth of activities and projects they are able to accommodate. Some sheds keep traditional tools for specialised woodworking and blacksmithing, others keep the latest gear, most offer a mixed bag, but every shed is different. When a shed closes all assets and equipment are either dispersed to surrounding sheds, sold off or dumped.

'A shed closure hurts all "shedders" because we all understand how hard it is to accumulate these treasures, not to mention the loss a community will feel in its absence,' says Matthew.

NAMING RIGHTS

In recognising its significant cultural shift, the Gundagai Men's Shed realised the sign out the front was no longer an accurate representation of what was happening inside its four walls.

'We rewrote our constitution and changed our name to the Gundagai Shed which encompassed both sheds,' says Matthew. 'Through inclusion we've empowered women in our community and they in turn revived the shed.

'We currently have the most members we've ever had with some travelling to us from other towns.'

Earlier this year and in conjunction with the not-for-profit organisation, Supporting and Linking Tradeswomen (SALT), Gundagai Shed facilitated its first workshop aimed at empowering teenage girls with the skills to use both hand and power tools.

'While we are not yet ready to pursue these workshops as a shed directly, adopting Emily Pilloton's idea of establishing a regular girls garage during school holidays

> Through inclusion, we've empowered women in our community and they in turn revived the shed

is definitely feasible,' says Matthew, referring to the Californian founder of Girls Garage who is committed to equipping young women with the skills required to 'build the world they want to see'.

GROWING MORE THAN MEMBERS

Just two years after Matthew's appointment, the Gundagai Shed received funding to create the New South Wales town's first community garden.

'We chose to use secondhand food-grade IBCs to construct 47 wicking beds,' explains Matthew. 'And Wagga Men's Shed donated old truck guards to build our mushroom beds which are a brilliant way to divert waste sawdust, wood chips and shavings from landfill.'

To conserve water, the shed purchased three large rainwater harvesting tanks to both remove the garden's reliance on town water and to reduce running costs associated with the garden.

'Sustainable water allowed us to establish a native green belt which would provide habitat for predatory insects and animals as well as attract pollinators,' says Matthew. 'By allowing a planned wild section of the garden we invited beneficial insects into our food-production areas and this has increased our yield while reducing pests.

GIVE AND TAKE

Because the council already had issues with fruit fly control, it asked that the project didn't include any fruit trees. As a result, the Gundagai Shed's productive food forest is a mixture of almond and hazelnut trees with an understory of rhubarb, asparagus, comfrey, mixed berries and herbs.

'As the cockatoos love our efforts, we eat lots of green almonds which are high in antioxidants,' adds Matthew.

The pandemic's associated restrictions meant fewer members were engaging with the garden, so the shed set up its 'take what you need, give what you can' table on its nature strip. Matthew said the vision was for it to be more than a swap stall, explaining that its core idea was that food can be free.

'Every neighbourhood has at least one citrus tree with fallen fruit at its base, a neighbour with a glut of silverbeet, a friend with too many seedlings, a stranger with an extra jar of pickles,' he says. 'The table can be a point of trade, but it's mostly just there to provide. Ours has been so successful we need a bigger table.'

A GREEN SHED

In 2020, the shed was able to secure council-assisted funding for a solar array and LED lighting. Solar energy quickly became its greatest asset as, at the time, it was earning credit for the shed during repeated lockdowns. And with energy-efficient lighting, not only was the shed more environmentally sound, it was also a brighter and therefore a much safer work environment.

The shed diverts waste by repurposing timber offcuts as affordable kindling. Many pensioners in Gundagai use wood-fired heating and the generous bags have become a service to the community. The pandemic has also helped shift the value of hardwoods and members are now using them and their offcuts in smaller and smaller projects – many shedders end up salvaging and repurposing whatever they can, whenever possible.

'I admire them for seeing value in the discarded, in their ability to see potential in something long lived yet well made,' says Matthew. 'I've also taken to carrying a screwdriver with me whenever heading to the tip.'

In promoting a culture of repair, the shed has actively sought community projects which seek to restore toys and furniture to good working condition.

'I'm always excited to see a much-loved toy returned to the shed for some rehab and I've learnt that wooden toys can be fixed multiple times,' Matthew says. 'We do what we can to minimise what ends up in landfill.'

As well as wood-working skills, many shed members have in-depth knowledge of all things mechanical, which means if any of the machines or tools in the workshop break or stop working, the membership is able to fix them.

'And if we don't have the necessary skills or equipment for a job we'll outsource to other sheds in our region before, begrudgingly, taking it to a shop,' says Matthew.

'This self-reliance in finding solutions to our own mechanical failures was a real revelation to me.'

THE VALUE

Sheds are about mateship, looking out for each other both physically and psychologically. They're about social connection through shared activities that builds both skills and community. ›

PUT TOOLS AWAY AFTER USING THEM AND CLEAN UP MESS

Opening page By including women, Matthew says it's saved Gundagai Shed. **This page, clockwise from top left** The Gundagai Shed now values sustainability as much as it does connections for its members; Matthew (second from right) is able to learn as much as he's given; He instigated Gundagai's first community garden on site; The produce is shared with those who need it; Some of the members' handiwork.

> “In working with older people you come to understand certain things in greater detail”

LEMONS
TAKE WHAT YOU NEED GIVE WHAT YOU CAN
FREE PLANTS

‘The friendships I’ve made through the shed and the connection I have to my community because of it have been invaluable in helping me build purpose in my own identity,’ says Matthew. ‘Without the shed, I’m sure I would be more insular and incapable of seeing the interdependencies within my community.’

Sheds are also about lifetimes of gathered truths and hard-earned wisdom acquired through lived experiences. Many shedders have lived through many problems and they’ve each found their own solutions. Hindsight is an amazing tool shed members have the benefit of being able to both share and receive; what they did, what they could have done differently, how you could apply their knowledge to your context.

‘In working with older people you come to understand certain things in greater detail,’ he says. ‘Death comes to us all and in seeing the aftermath you appreciate what you have, if only for part of a lifetime. In my time at the shed I have witnessed a number of kind words said in sombre circumstances and it doesn’t get easier.

‘When you go to funerals you finally get to see who these shedders were to their children and grandchildren. You empathise with them, because these shedders shared the same life stories, humour and lessons with you. And you can’t help but feel privileged that they had made the decision to spend a number of their final days in your company.’

PRIORITISING TODAY

As Matthew points out, it’s sometimes easy to think we have plenty of time to meet these knowledgeable humans and there’s time to learn these skills someday, somewhere. As our lives become busier and more consuming, it’s easy to brush over the retired members of our community and miss out on the wonderful things they have to offer.

‘I’d urge everyone to go have a cuppa and a biscuit. You don’t have to join a shed, but you do have to pay homage to our elders, admire the few who continue to do,’ says Matthew. ‘Do it as often as you can and better yet, bring a deck of cards or a packet of liquorice all-sorts.

‘If you’re like me and truly see the value in those shared moments over a Kingston, a finished project, solving a smartphone issue or getting a grant approved, you’ll begin to see something that could potentially outlive everyone in the room, including yourself.’

LASTING LEGACY

Matthew might have only been 32 years old when he took on the task turning around the fortunes of the Gundagai Men’s Shed, but five years, a pandemic and a wealth of experience later, he’s not only transformed the place into a thriving and inclusive community space, but it’s transformed how he sees the world.

‘Should you decide you’re going to help build a legacy, invest in making your local shed as resilient and sustainable as possible,’ he says. ‘Apply your time where it will continue to matter in another 50 years. Food security and interdependence in our energy-deficient future will be paramount to our health and wellbeing.’

This article represents the permaculture principle INTEGRATE RATHER THAN SEGREGATE. For more info go to page 99.

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Self-watering WICKING BED

WORDS & PHOTOS BY ROBYN ROSENFELDT

Wicking beds are a self-watering raised garden bed perfect for growing vegies. They save you time, reduce your water usage and they're reasonably easy to make yourself.

As the name suggests, wicking beds draw moisture from beneath the soil using capillary action, and providing water to your plants from below rather than above has many benefits. Not only does it save you time watering, but evaporation is reduced, the risk of fungal disease is lessened and the wicking action ensures the moisture is more evenly distributed throughout the soil.

WHAT YOU'LL NEED

With a bit of nous and know-how, making your own wicking bed out of found objects is a relatively easy process and can save you hundreds of dollars.
First you'll need a container; this can be an old timber fruit bin, an IBC like we have used, or any vessel that's somewhere between 60–80 centimetres deep.

IBC containers are ideal as they are large and designed to hold liquid. If you're using a timber box or another container that needs waterproofing, this can be achieved using a pond liner or a piece of builder's plastic – just check the inside of the box to ensure there's nothing protruding that might pierce your lining.

You'll need two or three different types of pipe (more on that later), some gravel or scoria – scoria's ideal because its porous nature assists in the wicking process. You'll need some geotextile fabric or shade cloth, and some good quality soil that's really high in organic matter. Again, the organic matter is crucial in the wicking process.

GETTING STARTED

The height of an IBC means you can cut it in half using an angle grinder which will give you two vessels with which to make wicking beds. Make sure you find out what your IBCs were used for previously – many are used to store agricultural chemicals and you don't want that leaching back into your water and your soil. The plastic tubs don't require lining, but if you've chosen a vessel that needs to be made watertight, do that now.

Your wicking bed will be too heavy to move once finished, so make sure it's sitting in a sunny position and use a spirit level to ensure it's sitting flat. If it's on an angle, the water won't be evenly distributed throughout your soil.

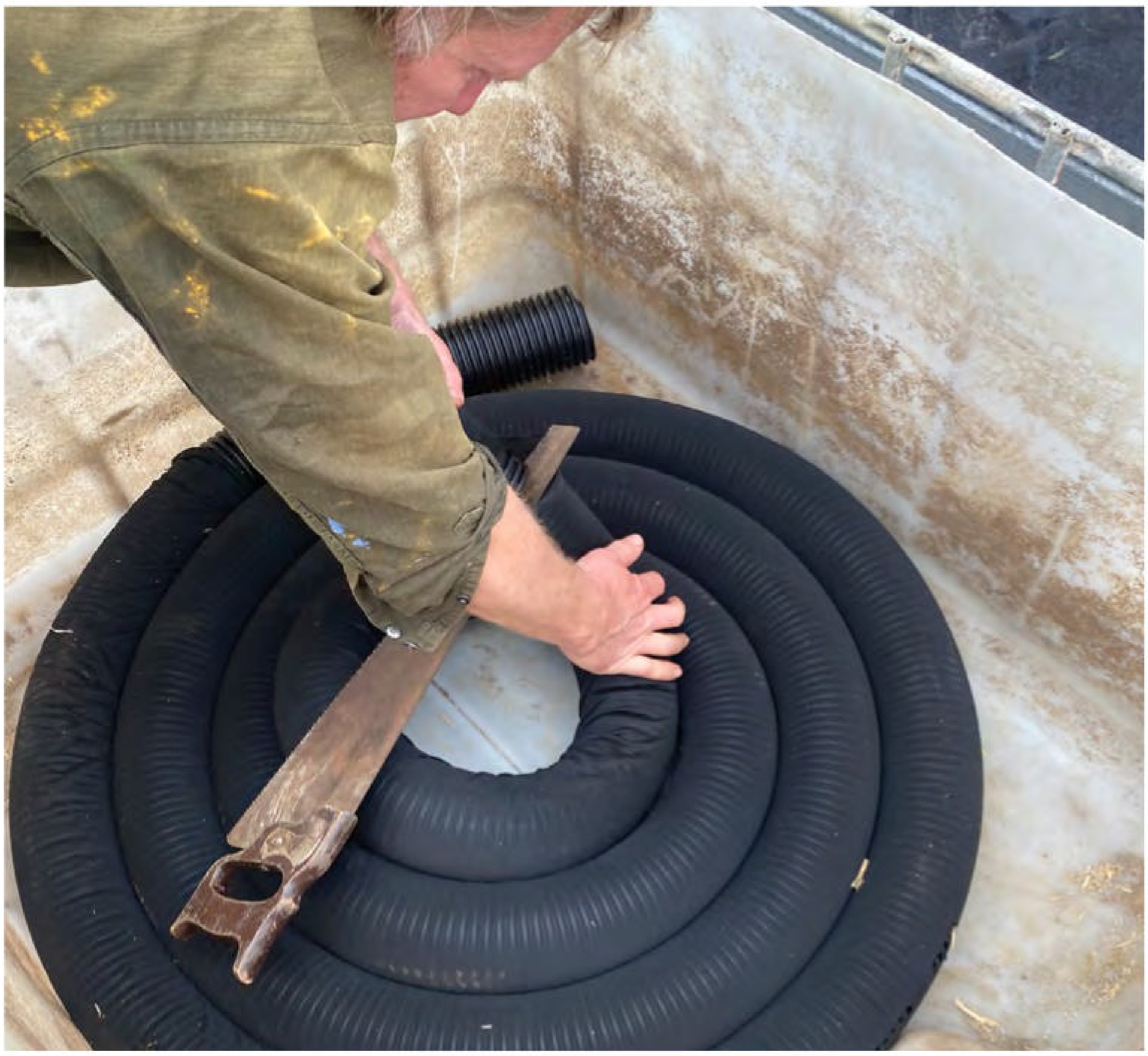
You're basically creating two layers within your box which are separated by a fabric membrane. The water layer at the bottom and the soil layer at the top. You want the water layer to be about one third the depth of your container, but your soil needs to be deep enough to host a wide range of vegies. But it's also important that it's not too deep as the capillary action won't work.

Our cut IBC is 70 centimetres deep, so we're working towards a depth of 20 centimetres for the water reservoir, 40 centimetres of soil, allowing 10 centimetres on top for mulching. You can use shallower containers, but these are better suited to things like leafy greens and other vegies with shallow root systems.

THE RESERVOIR

The reservoir can be created in a number of ways. The basic idea is to have a pipe that's distributing water across the base of the container which is connected to a vertical

›



> You're basically creating two layers within your box which are separated by a fabric membrane

pipe via which to fill the reservoir once the soil is on top.

You can either use two pieces of PVC pipe with an elbow join to create the vertical and horizontal lengths, but the horizontal pipe will need to have holes drilled along its length so the water releases evenly throughout the base. We've opted to connect our vertical pipe to ag pipe, which is both perforated and flexible, and perfect for this application. It's also a good idea to make your vertical pipe large enough to fit a hose into, to make filling with water easier.

Once in place cover the pipe with gravel or scoria. If you're using gravel, make sure it's between 7–15 millimetres in size, if it's too large, the wicking process won't be able to occur. If you don't have any ag pipe, another option is to create the reservoir using upturned plastic pots covered with aggregate. You're looking to create voids where the water can be stored and the aggragate allows the water to be wicked up to the soil level even when the water level is low.

OVERFLOW AND BARRIER

Once your pipes and aggregate are in place and nice and level, you need to create an overflow outlet in your container using a small piece of irrigation pipe. This ensures that the container won't be able to hold more water than the reservoir can hold and that your soil layer will remain free-draining and not waterlogged.

It's important this is positioned underneath your fabric layer so it doesn't clog up with soil. Drill a hole the same size as the outlet pipe and insert it from inside your vessel.

Now you need to create a barrier to stop the soil falling through into the reservoir, but while allowing the water to pass through from the base of your wicking bed.

You can buy geotextile fabric, which is designed to withstand soil and water without breaking down, but hessian bags and shade cloth will also do the trick. Cut the fabric to size and place it carefully over the top of your gravel layer, tucking in the sides as you go.

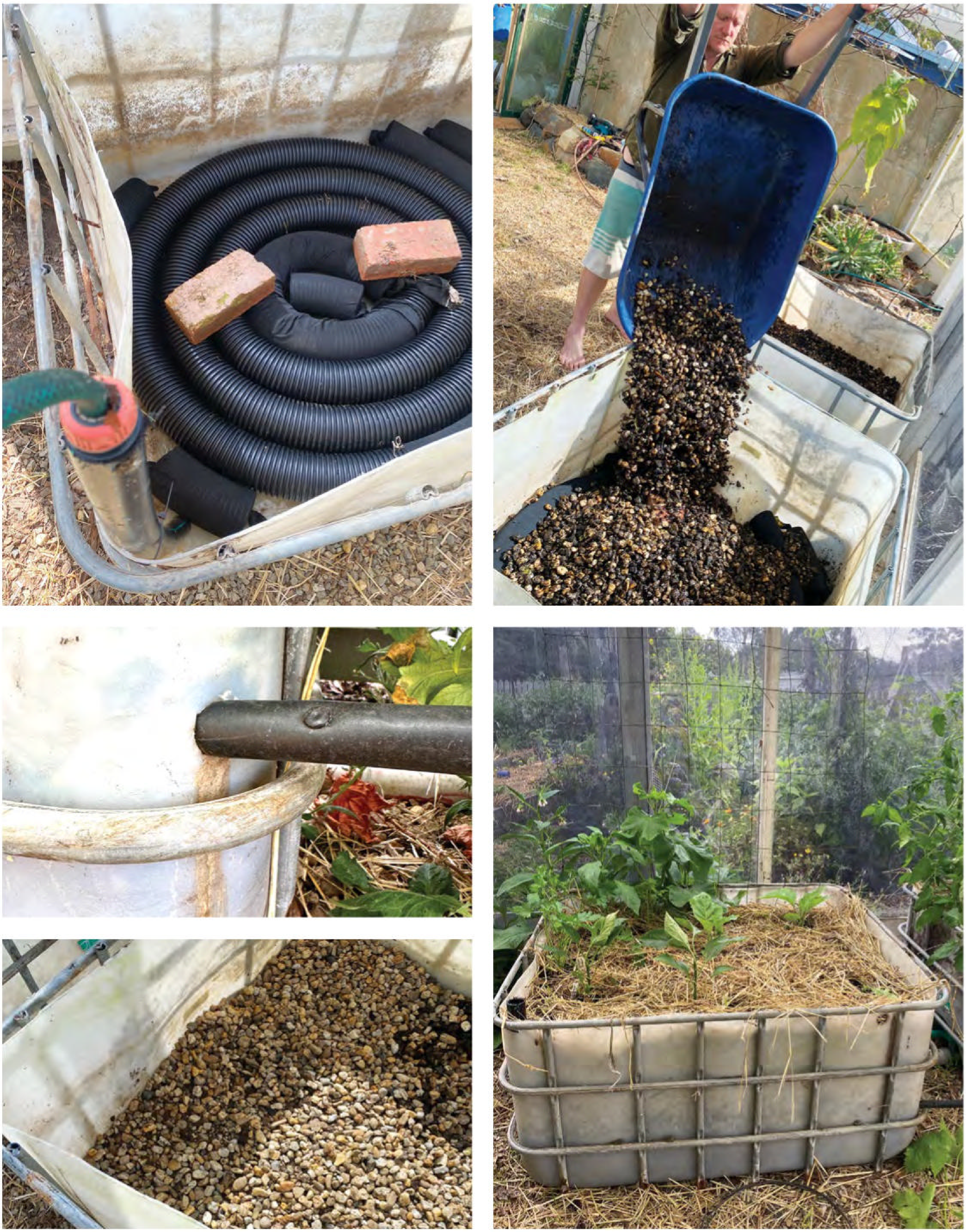
FILLING WITH SOIL

Next you need to fill it with soil. It is really important to add lots of nutrients in here, lots of well-rotted compost and organic matter. As well as ensuring you'll have the most effective capillary action watering your plants, a wicking bed isn't connected to the earth, meaning you won't get worms and organic matter naturally migrating into the soil. We used half soil and half compost, and continually build soil by top dressing with homemade compost between plantings.

The soil will take some time before it's wicking by itself, so make sure you water your news plants in well after planting, and keep the water up them for a week or so before your wicking system takes over.

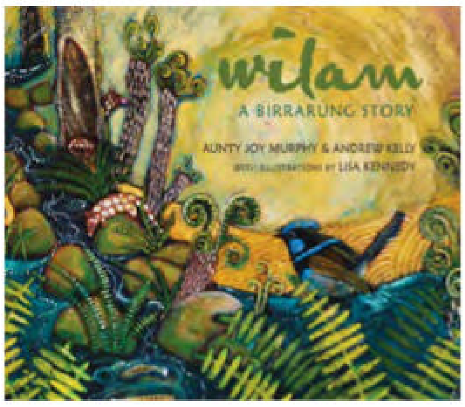
Mulch the bed well once planted out to make the most of your new water-saving garden bed, and it is also good idea to cap the vertical pipe with something to stop mozzies making a home in your water reservoir.

Watch the video!
on the Pip website

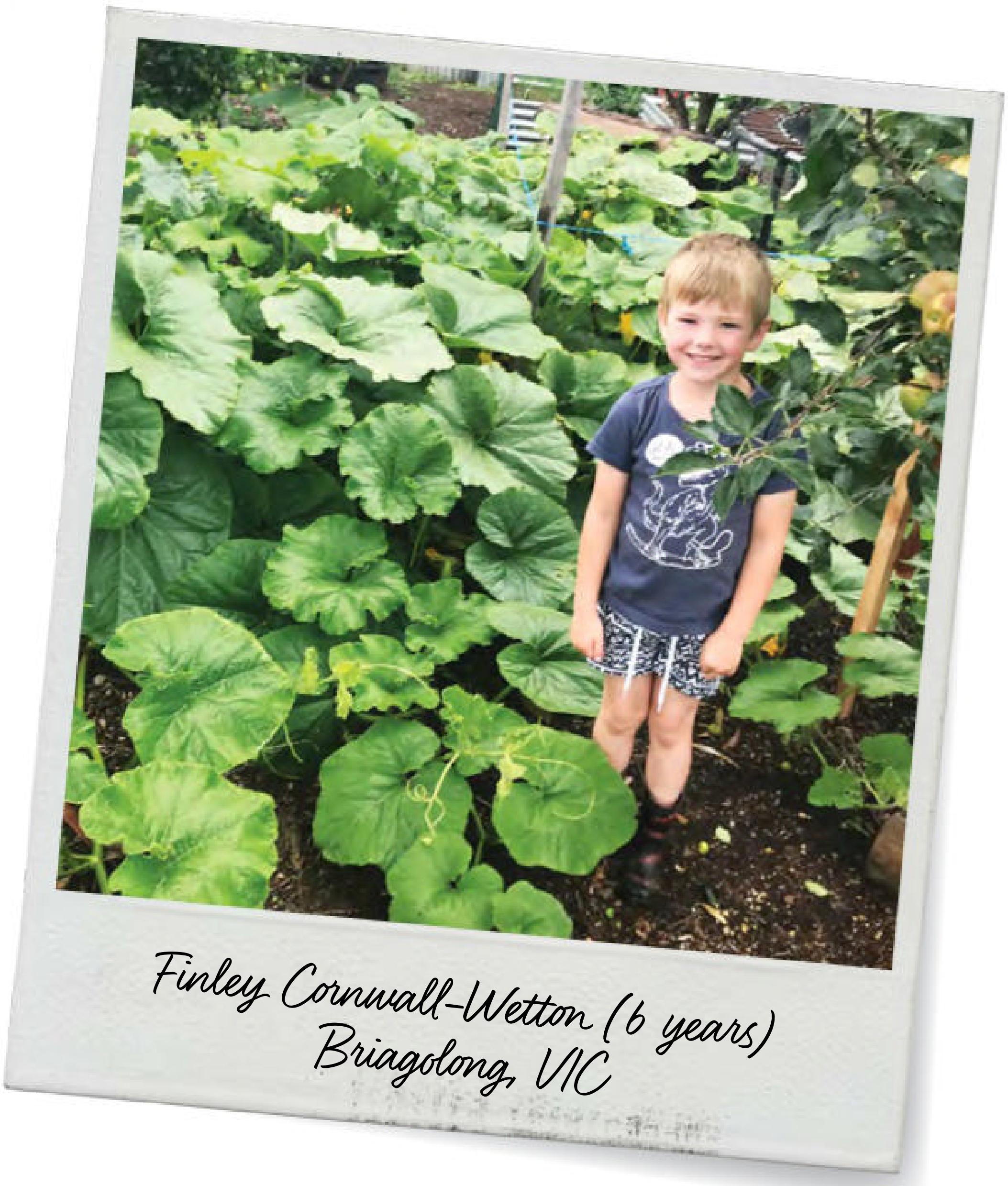


Opening page Wicking beds save water and time – win, win! **This spread, clockwise from top left** The ag pipe creates a void for the water; The size of the aggregate you use will affect the wicking process; Mulching your wicking beds will reduce evaporation; Ensure your gravel layer is level before adding your fabric layer; The drainage hole is important to ensure your bed doesn't become waterlogged.

KIDS' PATCH


wilam
A BIRRARUNG STORY
AUNTY JOY MURPHY & ANDREW KELLY
ILLUSTRATIONS BY LISA KENNEDY

We love seeing what kids are growing with their families in their gardens, so snap and email us an image of what you're harvesting at the moment. Send the photo to editorial@pipmagazine.com.au – you might even pick up a copy of *Wilam, A Birrarung Story*. This issue's winner is six-year-old Finley Cornwall-Wetton from Briagolong, Victoria.



Finley Cornwall-Wetton (6 years)
Briagolong, VIC

SHOW US YOUR GARDEN

Leifr (7) and Darcy (6)

Enkindle Village School, Townsville

Tell us about your patch

Darcy: We spend a lot of time eating in it. We love to eat tomatoes, sunflower seeds and kale. Our garden is a peaceful place to go in the mornings. We share our garden with the animals.

What are your favourite things to grow in your patch?

Leifr: My favourite things to grow are sunflowers and loofas.

Darcy: Kale and basically the same as Leifr, wonky carrots and beetroots, sometimes we make beetroot brownies.

What are some of the more interesting parts of the garden?

Leifr: Praying mantis hatching and the frog pond and the mulberry tree – I've eaten a thousand mulberries.

Darcy: The banana circle and eating the mulberries.

What activities do you do in the garden?

Leifr: We do a lot of eating and we do bird watching, there is a baby bird, and plant seeds all the time.

How is the food used that grows in the garden?

Leifr: We eat it.

Darcy: Beetroot brownies, kale chips, pizza, we had a carrot party with hummus. We make paint with spinach seeds.

Tell us about the animals and insects that live in the garden?

Leifr: We need insects in our garden to pollinate flowers. We share the garden, it's not ours. There are so many wasps and bees that drink from our frog pond we made.

Darcy: Lots and lots of birds, lady beetles, ants a bearded dragon.

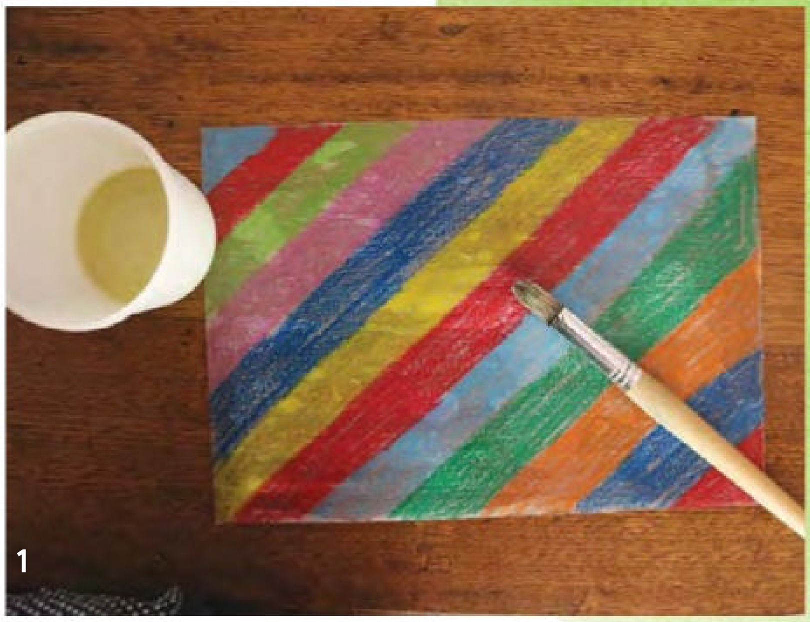
FOLD YOUR OWN PAPER BOAT

By Emily Gray

Make the most of the remaining warm days with some backyard boating

WHAT YOU'LL NEED

A rectangular piece of paper, vegetable oil and a paintbrush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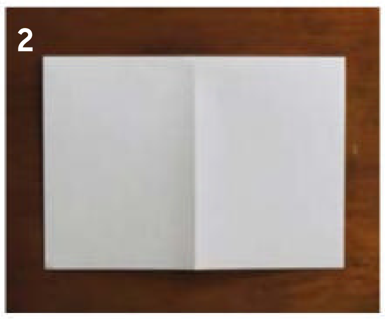
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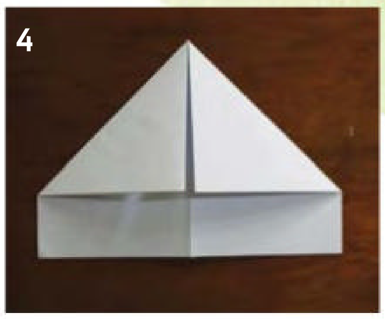
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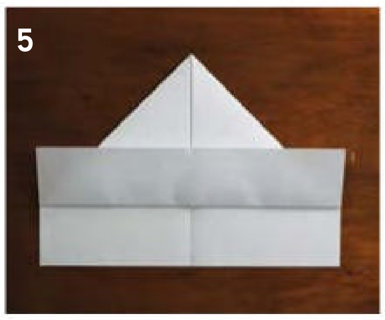
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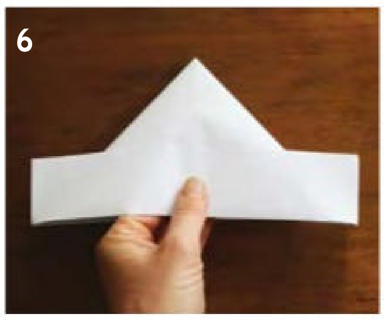
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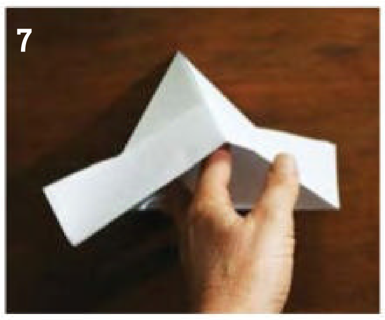
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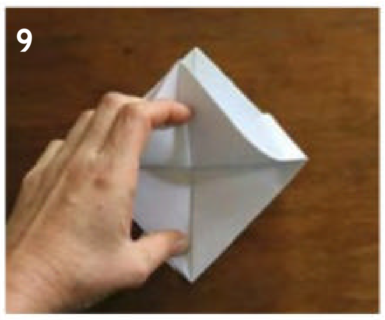
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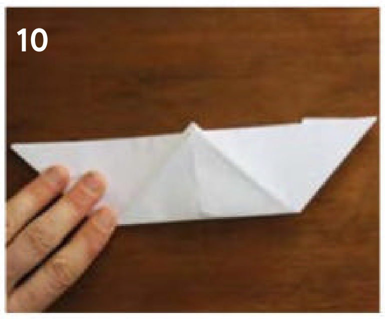
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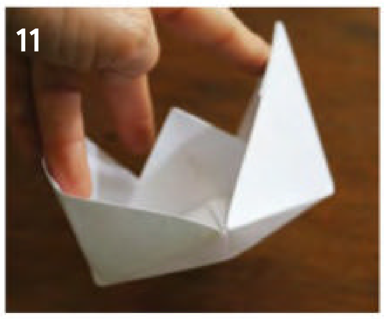
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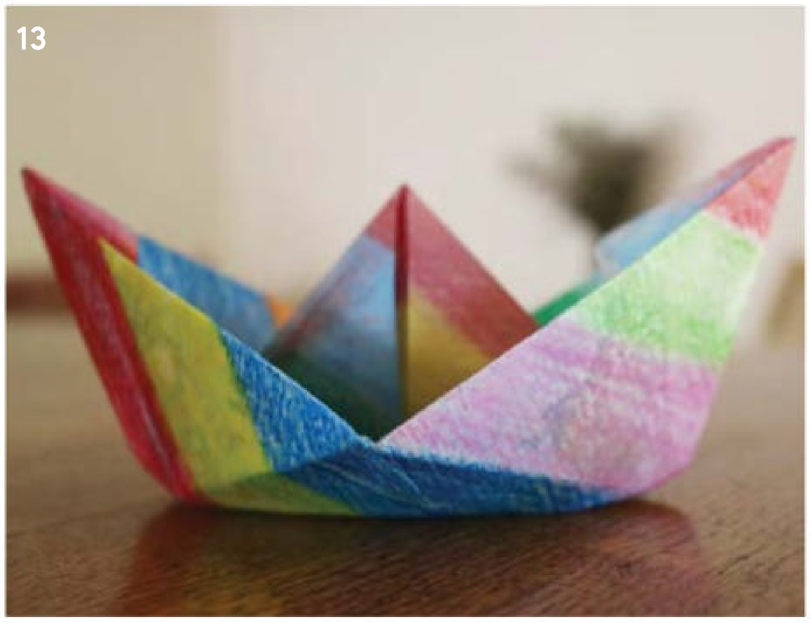
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DIRECTIONS

1 Waterproof your paper by painting it with the oil and hang it out in the sun to dry. If you want to decorate the paper, do it beforehand.

2 Once dry, fold in half lengthwise and open it back up.

3 Fold in half widthwise and rotate the paper so that the fold is at the top.

4 Take each of the top corners and fold them downwards to the centre line.

5 Take one layer of the bottom flap and fold it upwards.

6 Flip it over and fold the bottom flap and fold it upwards.

7 Place your thumbs into the opening at the bottom. Slowly pull apart the paper and flatten.

8 Rotate the paper so that the fold is at the top.

9 Bring the bottom point up to meet the top point, making sure all of the edges line up.

10 Flip the paper over and repeat.

11 Place your thumbs into the opening at the bottom. Again, slowly pull apart the paper and flatten.

12 Pull top parts outwards, making a boat shape.

13 Squish the bottom and pull the sides up and you're ready to set sail!

FUN PAGES

Q WHAT'S ORANGE AND SOUNDS LIKE A PARROT?

A A CARROT

FUN FACTS ABOUT CHOOKS

Six things you may not know about backyard chickens

1 There are more chickens on earth than people!

2 Chickens are living descendants of dinosaurs

3 Because they experience REM sleep, chooks have dreams

4 The record for the most egg yolks in one egg is nine yolks!

5 The record number of eggs laid by a chicken in one day is seven

6 Chooks clean themselves by bathing in dirt

Q WHAT KIND OF SHOES DO FROGS WEAR?

A OPEN-TOAD!

FIND-A-WORD

How many of the 24 words from this issue can you find hidden in this box?

SOIL
SHARE
EXCHANGE
FARM
CAPSICUM
COMPOSTING
MICROBES
MULCH
HERBAL
MEDICINE
GUNDAGAI
WOMEN
ENOUGHNESS
OAKHILL
FARMER
SWAP
EDIBLE
GARDEN
TOOLS
PASSATA
TOMATO
SHEARS
ECOSYSTEMS
CONNECTIONS

P	O	N	W	H	D	A	E	C	T	H	B	X	V	X	F	S	X	P	Y
D	M	A	E	U	S	O	U	N	G	P	K	B	O	W	K	N	G	C	X
L	E	Y	K	D	I	L	G	U	N	D	A	G	A	I	Z	J	C	M	K
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O	I	E	W	B	I	Y	O	S	V	G	A	R	D	E	N	O	A	U	T
C	C	Z	O	F	I	L	T	M	W	E	P	H	H	E	R	B	A	L	O
X	I	C	E	A	C	W	L	M	P	A	D	D	Q	Z	K	T	Q	C	O
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J	I	C	Z	N	W	S	O	O	E	I	U	P	Q	N	Q	G	L	U	P
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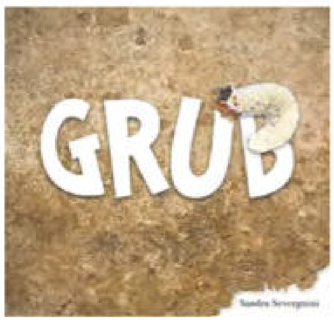
H	U	W	O	C	R	R	S	S	H	F	M	W	K	N	S	Q	N	A	F
E	O	V	M	T	H	E	Z	T	A	Z	N	O	B	S	E	A	K	K	G
A	P	N	A	I	E	R	A	E	N	Z	M	M	Z	I	Q	S	T	V	N
R	Q	N	T	O	H	O	V	M	G	V	U	E	N	J	B	L	S	A	F
S	O	G	O	N	C	E	E	S	E	S	P	N	Z	X	R	I	W	G	T
S	V	X	T	S	C	F	U	N	D	C	C	P	H	M	F	L	W	C	B

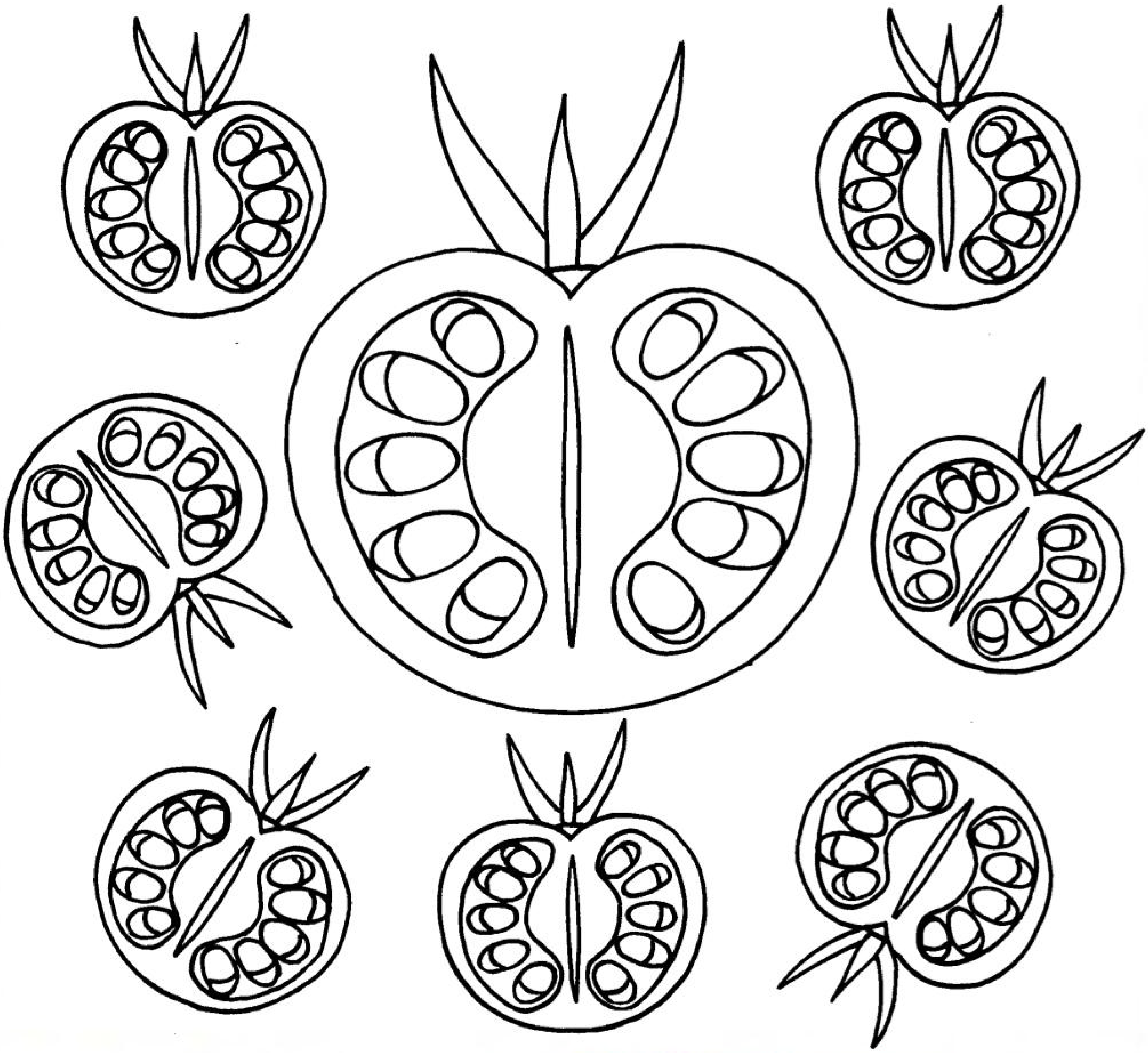
Alice Stockx
Bendigo, Vic

COLOUR IN OUR COVER IMAGE

Have a go at colouring in the image that appears on this issue's cover. Once you're happy with it, ask an adult to take a photo of you holding your artwork and have them email it to editorial@pipmagazine.com.au. You can post your entry to Pip magazine,
PO Box 172, Pambula, NSW, 2549.
The winner will be published in the next issue and will pick up Sandra Severgnini's new book *Grub*.



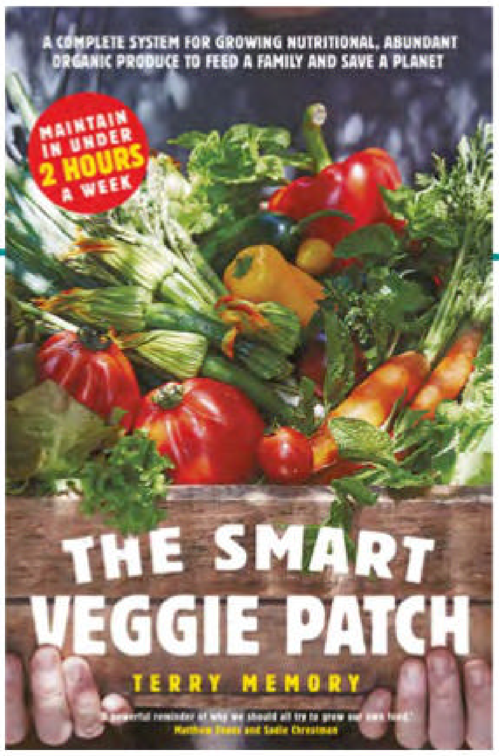
Issue 26's winner is **Alice Stockx from Bendigo, Victoria.** Well done to everyone who entered.



LOOK & LISTEN

The books, films & podcasts inspiring you to make a difference

Books


A COMPLETE SYSTEM FOR GROWING NUTRITIONAL, ABUNDANT ORGANIC PRODUCE TO FEED A FAMILY AND SAVE A PLANET
MAINTAIN IN UNDER 2 HOURS A WEEK
THE SMART VEGGIE PATCH
TERRY MEMORY

THE SMART VEGGIE PATCH

A COMPLETE SYSTEM FOR GROWING NUTRITIONAL, ABUNDANT ORGANIC PRODUCE TO FEED A FAMILY AND SAVE A PLANET

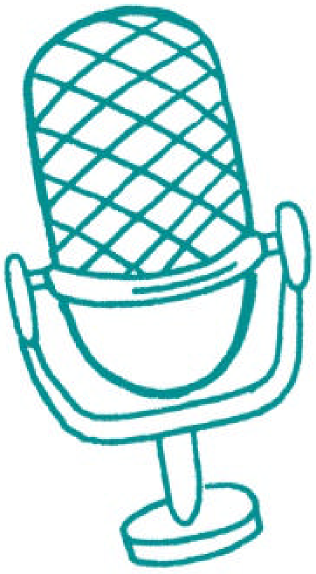
BY TERRY MEMORY (PAN MACMILLAN 2022)

After surviving the Black Saturday bushfires, Terry Memory built his family of eight a vegie patch. Determined to become more self-reliant in this era of unpredictable weather events and worsening health caused by highly processed food, he designed a system that combines ancient agrarian traditions with the latest in science and technology to deliver massively increased yields while radically reducing workload.

In this book, Terry's overview of the deteriorating state of our food supply will inspire you to take a step towards self-reliance, while his practical tips and how-to guides will provide would-be food growers the tools needed to get going. Well researched and passionately argued – and with clear and accessible instructions – this is a book for anyone looking to cut costs, improve their health and help save the planet.

Terry and Gemma Memory and their six children have lived on their organic, self-sustainable farm in southern Tasmania for over a decade. As entrepreneurs, they have founded two successful health-food businesses and now devote their time to helping others understand the importance of creating their own food-secure future.

Podcasts



PLANTHROPOLOGY
PODCAST

PLANTHROPOLOGY PODCAST

Whether you're a vegan, a carnivore or somewhere in between, plants are the basis of the food we all eat, the clothes we all wear and the air we all breathe. From the soil to the plate to the climate, dive into the anthropology of plants and learn why we all need to care a little more about the world around us.

Chris Jeffries

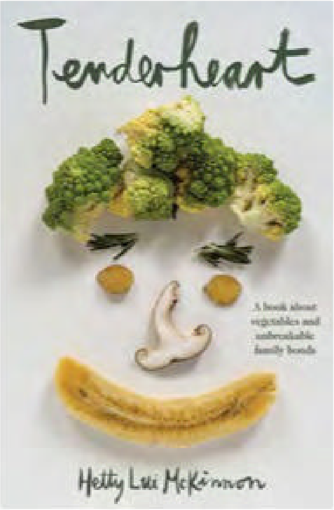
HOMELESS ROMANTIC

Not strictly a podcast about sustainability, but Chris Jeffries' conversations with people from all walks of life has plenty to pique the interest of Pip's readers. Things like rethinking agriculture with Axel Anders and living life with intent from Sea Shepherd's Gert Vons, through to the truth about melting sea ice with climate scientist Julienne Stroeve.

Wild Edible
World

WILD EDIBLE WORLD

A foraging podcast that dives into all of the amazing untamed flavours you can find trailside, curbside and low tide; where the best food is free. The weekly podcast discusses wild plants with the people that eat them all around the world. Its goal is to share knowledge to foragers, but also reduce the stigma surrounding wild edible plants.



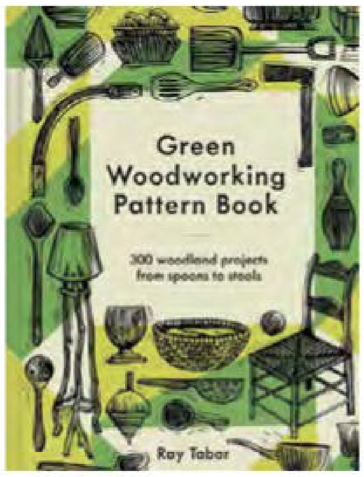
TENDERHEART

A BOOK ABOUT VEGETABLES AND UNBREAKABLE FAMILY BONDS

BY HETTY LUI MCKINNON (PAN MACMILLAN 2022)

Tenderheart is a book about vegetables, but also a story of love and loss, and the legacy of food as a way to stay connected to loved ones, including those who have passed.

Vegetable-loving food writer Hetty Lui McKinnon takes readers on a vegetable-by-vegetable journey, packed with clever and inventive ways to combine ingredients, flavours and texture. With practicality, accessibility and economy in mind, Hetty devotes one chapter to each of her 22 favourite everyday vegetables, from Asian greens to zucchini. As is Hetty's signature, the flavours are globally inspired, with an emphasis on simple yet inventive weeknight cooking.



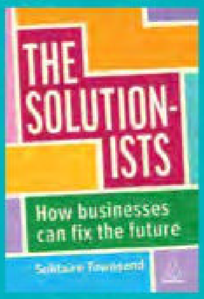
GREEN WOODWORKING PATTERN BOOK

300 WOODLAND PROJECTS FROM SPOONS TO STOOLS

BY RAY TABOR (HARPER COLLINS 2022)

Green woodworking involves the use of freshly felled timber, and embraces a number of traditional woodland crafts, including turning and carving. This book contains over 300 patterns for home and garden, from wattle gates to lemon juicers, from chairs and stools to baskets, whistles and spoons – all with detailed dimensions in both metric and imperial. Each item has annotated black-and-white patterns, a brief description, historical information and details of the materials that should be used. Includes the simplest of woodland designs to more advanced, with something for everyone. Both a historical record and a sourcebook for those looking to use their green woodworking skills to make traditional items of beauty, the book should be on the shelf of anyone interested in whittling, woodland crafts and any kind of woodworking.

NEW RELEASES

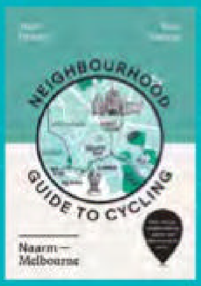


THE SOLUTIONISTS

HOW BUSINESSES CAN FIX THE FUTURE

BY SOLITAIRE TOWNSEND (KOGAN PAGE 2023)

In the face of our climate emergency, we desperately need solutionists working to fix the future. This is your handbook for becoming the leader that the world needs. *The Solutionists* sets out what it takes to join the new generation of entrepreneurs, CEOs and leaders transforming business to create a more sustainable society.



NEIGHBOURHOOD GUIDE TO CYCLING

NAARM – MELBOURNE

BY TRENT HOLDEN & KATE MORGAN (HARDIE GRANT 2022)

No lycra? No worries, this is a fun, accessible guidebook for riders of all ages and levels. Whether you zoom around daily on your fixie or if it's been a few years (or decades) since you've dusted off your old bicycle, you'll find helpful tips and tricks on everything from basic bike repair to current-day cycling etiquette.

PLANTS

PAST, PRESENT AND FUTURE

BY ZENA CUMPSTON, MICHAEL-SHAWN FLETCHER & LESLEY HEAD (THAMES & HUDSON 2022)

For millennia, reciprocal relationships with plants have provided both sustenance to Indigenous communities and many of the materials needed to produce a complex array of technologies. *Plants: Past, Present and Future* celebrates the deep cultural significance of plants and shows how engaging with this heritage could be the key to a healthier, more sustainable future.

TRIED & TRUE

Where we use and review products that nourish us and the planet

AUSSIE MUSHROOMS
GOURMET MUSHROOM

Homegrown mushrooms
SIDE-FRUITING KIT

By Julie Bennett

If you don't have the time or the confidence to forage for mushrooms, but aren't particularly keen on store-bought varieties, there are plenty of kits available to grow your own. As well as the common boxes of button mushrooms, there's a wide range of seasonal varieties you can purchase in kit form to grow yourself and the side-fruiting kits are probably the easiest.

Aussie Mushroom Supplies offers five varieties: Oyster, Australian Lions Mane, Australian Coral Tooth, Turkey Tail and Australian Reishi. Inside the shoebox-sized box is a bag filled with pre-inoculated substrate, meaning all you need to do is remove the bag from the box, cut an X on the side of the bag for the mushrooms to protrude from and create humidity by spraying filtered (or cooled boiled) water around the hole. It's not like watering a plant, you don't need to wet the actual block, you just need to spray around the cut in order to create enough humidity to kickstart the fruiting process.

Finding the best place to keep your kit can be tricky because it needs non-direct sunlight and not a lot of it – Aussie Mushroom Supplies says 'enough light to read by' – it needs at least 70 percent humidity, but also fresh air and cool-ish temperatures. But once you've found your spot, they're pretty quick to grow.

It took three weeks for my kits to start fruiting and they were ready to harvest about 10 days later. And you can get a few flushes of fruit from the one block, too, which is great. In fact, after three harvests I added my blocks to the compost heap and I found they even fruited again (see image, right).

The only thing I don't love about the kit is the plastic wrap you are left with at the end – especially since I know the plastic isn't necessary for fruiting. I suspect it has to do with guiding the growth from a particular spot to get the most from your harvest, but a more sustainable option would be good to see.

★★★⯪☆

Product **Mushroom kit**
Price **$33.00**

aussiemushroomsupplies.com.au

PALM OIL FREE • VEGAN
CRUELTY FREE
VIVA LA BODY
EST 1999
SOLID
CONDITIONER
EVERY DAY PEOPLE BAR
SALON FORMULA
GREAT FOR ALL HAIR TYPES
BIODEGRADABLE • COMPOSTABLE PACKAGING
55g
1.94oz

Viva La Body
SOLID CONDITIONER

By Robyn Rosenfeldt

I tried the Viva La Body Solid Conditioner and, together with the shampoo bar, they kept my hair clean and also feeling soft and looking shiny.

The 55 gram bar lasted me several months using it every three days or so. I am in the ocean regularly and they worked well with managing the harshness of the seawater, too. When I went travelling I just put them both in a plastic container and they are nice and compact to take with you.

Compared to a liquid conditioner, the bar takes slightly more effort to work through your hair, but the difference is minimal and the reduction in bathroom waste is huge. I have tried several other solid conditioner bars that didn't lather as well and left my hair dry and dull. I used the For Everyday People version, but it's available in a wide range to suit different hair types from curly, frizzy, sensitive scalps and more.

★★★★½

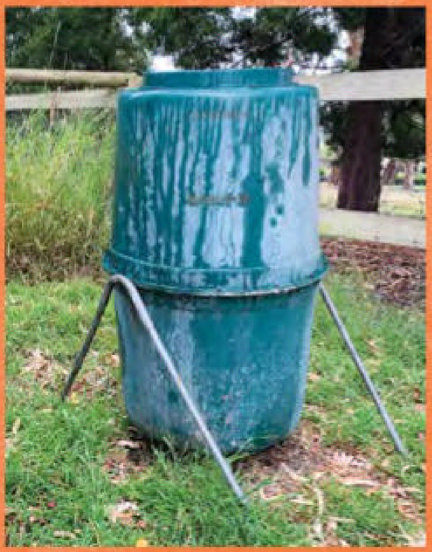
Product Viva La Body Conditioner Bar 55 g - Every Day People
Price $20.00

vivalabody.com

PIP CLASSIC

Tumbleweed
MULCHMAKER

By Tim Buckley



I've been using Tumblweed's 220L Mulchmaker compost tumbler for nearly a decade as part of the composting system we use on our five-acre property. While general garden waste is processed in open compost piles, the tumbler is used for smaller-sized waste like kitchen scraps, ash and leaf litter.

The best thing about it is we don't need to worry about rodents (or labradors) being attracted to the composting food scraps because it's a sealed unit. It can be difficult to get the nitrogen-to-carbon ratio right as it's harder to see in to see what's happening, but there's a 'breaker bar' inside that aids with aeration and mixing, which is useful.

It gets quite difficult to tumble the more full it becomes, and while for convenience I want to keep it near the back door, it's really hard to move once it's ready to empty. So you're better off keeping it near the beds you're going to use it on.

When it was new, the bottom of the barrel was 30 centimetres or so off the ground which meant I could get a shovel under it as I was emptying it. But over a decade of use, the legs have splayed apart, meaning the gap between the opening and the ground has reduced which now makes emptying it more arduous. If Tumbleweed hasn't already addressed this, I'll strap the two legs together on the next one to stop this. Otherwise, all of the moving parts have stood the test of time.

Product 220L Compost Tumbler
Price $209.00

tumbleweed.com.au

ETHICAL MARKETPLACE

Pip partners with brands who align with its values. Ethical companies producing good-quality products that don't harm the planet, instead aiming to improve it. Browse more ethical companies you can choose to support at www.pipmagazine.com.au

PHION
Catalyst

UNLOCK YOUR SOIL'S POTENTIAL

Catalyst Soil Conditioner Liquid is a fermented fertiliser containing a balanced formulation of beneficial microbes and more than 80 essential minerals so that passionate gardeners, professional growers and farmers can achieve first-rate results in soil health, plant nutrition and yields.

www.phion.com.au

TORE SOCKS

Socks are a wardrobe essential that shouldn't cost the earth. TORE, from TOtally REcycled – is the world's first 100 percent recycled sock. One pack of TORE socks saves 1050L of water, diverts 2.4 plastic bottles and 0.6 T-shirts from landfill. TORE reduces the negative impacts of fast fashion, without compromising comfort or style. Use the code PIP15 for a 15 percent discount.

www.wearetore.com.au

LILY AND MAUDE

Bringing sustainable, organic and ethical products to the crafting world, Lily and Maude offers naturally coloured, unbleached and undyed fabrics and upcycled yarns. Aiming to reduce the amount of harmful packaging, Lily and Maude also offers a beautiful range of patterns, books and bamboo crafting items. Use the code PIPLILY for a 10 percent discount.

www.lilyandmaude.com

UNIQUE FIRE PITS

Whether it's a uniquely designed barbecue to socialise around, a custom backyard centrepiece to marvel at or you just want to maximise your backyard's potential during those cold winters nights – Unique Fire Pits can make your dreams a reality. Get a free accessory with every fire pit purchased.

www.uniquefirepits.com.au

EVERTRUE SOLUTIONS

Business is stressful and harder when your passion is plants – not spreadsheets. Evertrue Solutions shows you how to 'permaculture your business' with one-on-one coaching and business reviews. You'll gain the confidence to run your business and peace from it being aligned with your values. Promote permaculture *and* make a living by doing what you love.

www.evertrue.com.au

STRIDE STORE

Stride is the home of sustainable fashion and skincare with over 100 Australian brands. Shop your values and discover options for women, men, teens, kids and non-binary folk knowing every brand is audited. As well as free shipping on all Australian orders, Pip readers save 15 percent using discount code PIP-15.

www.stridestore.com.au

LEITNER
LEITNER

LEITNER E-BIKES

Ride further faster with Leitner's range of award-winning e-bikes. One of Australia's fastest growing e-bike retailers, Leitner's goal is to make modern e-bikes more affordable. Founded by German-born Melbournian Ephraem Leitner, the range includes folding, road, hybrid, MTB and cruiser models.

leitner.com.au

PIP PARTNER

permaculture
education institute

Change maker

MORAG GAMBLE

Most people are content contributing just one task or role that's making real and positive change. Not Morag Gamble, she's got fingers in permaculture pies all over the world and, importantly, she practises what she preaches.

Morag Gamble is many things: founder of the Permaculture Education Institute, founder and executive director of the Ethos Foundation charity, cofounder of Northey Street City Farm in Brisbane and the Australian Community Gardens Network. She's an ambassador, a writer, a filmmaker for her YouTube channel *Our Permaculture Life*, and the host of the permaculture podcast *Sense-Making in a Changing World*. She's a wife and a mother and she lives with her family in an ecovillage on the outskirts of Brisbane.

PERMACULTURE EDUCATION INSTITUTE

A global online community connecting generations and cultures and inspiring them to explore ways to create permaculture livelihoods. Through its Permaculture Educator's Program, the institute trains teachers all over the world, there's a comprehensive PDC at its core, which will soon be offered independently. Reaching six continents, graduates of the program not only learn how to design abundant permaculture systems, but also how to adapt the courses to their individual needs.

As well as the Educator's Program and Teacher's Certificate, it runs the Incredible Edible Garden course, a communications program and even business mentoring. And 2023 will see new courses, too, including Permaculture with Children and youth-led Permayouth Practivism.

With a focus on education, Hive is a digital space designed for PDC graduates to continue learning and growing. A place to cross-pollinate ideas, skills and knowledge, myceliate the thinking and practice of permaculture, find mentors and collaborators, and grow a regenerative permaculture livelihood. Hive includes permaculture-design and permaculture-education students, a permaculture with children focus group, a permaculture writers group, a care permaculture group and much more.

ETHOS FOUNDATION

The Ethos Foundation is a charity dedicated to supporting women and youth to gain access to permaculture education and become leaders in their own communities. It supports refugees and Indigenous youth with a focus on the southern hemisphere. As well as donating more than half of her time supporting youth and women in refugee settlements, Morag leads the Ethos Fellowship, which connects young activists with leading scholar-activists like Jeremy Lent, Nora Bateson and Helena Norberg Hodge.

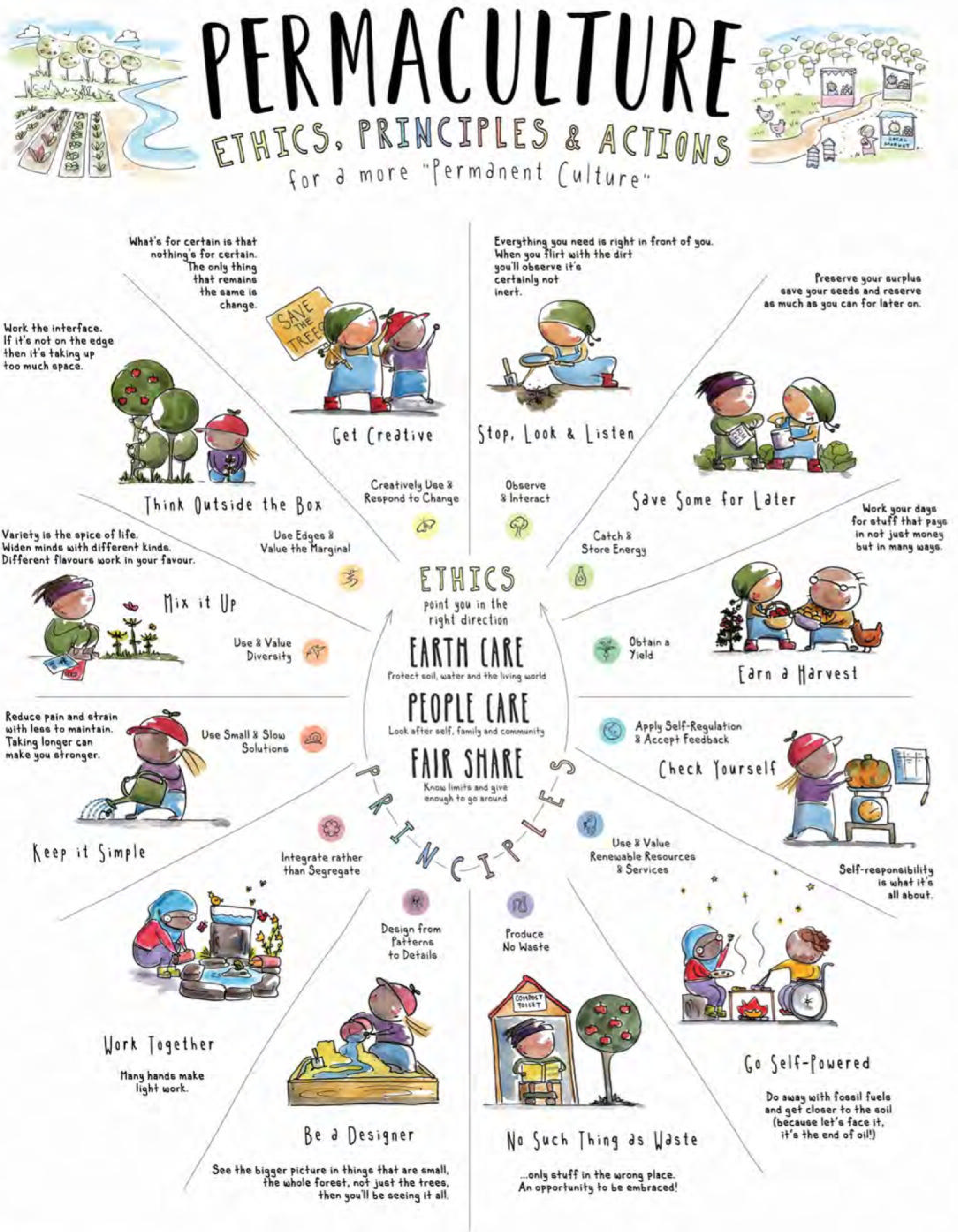
WELL CONNECTED

As well as interviewing international leaders in ecological thinking, Morag hosts free online masterclasses for a global permaculture audience and International Permaculture Day events. She is also an ambassador for the Global Ecovillage Network and Urban Agriculture Month. ■

PERMACULTURE

ETHICS, PRINCIPLES & ACTIONS

for a more "Permanent Culture"



ETHICS

point you in the right direction

EARTH CARE

Protect soil, water and the living world

PEOPLE CARE

Look after self, family and community

FAIR SHARE

Know limits and give enough to go around

PRINCIPLES

Observe & Interact

Stop, Look & Listen

Everything you need is right in front of you. When you flirt with the dirt you'll observe it's certainly not inert.

Catch & Store Energy

Save Some for Later

Preserve your surplus save your seeds and reserve as much as you can for later on.

Obtain a Yield

Earn a Harvest

Work your days for stuff that pays in not just money but in many ways.

Apply Self-Regulation & Accept Feedback

Check Yourself

Self-responsibility is what it's all about.

Use & Value Renewable Resources & Services

Go Self-Powered

Do away with fossil fuels and get closer to the soil (because let's face it, it's the end of oil!)

Produce No Waste

No Such Thing as Waste

...only stuff in the wrong place. An opportunity to be embraced!

Design from Patterns to Details

Be a Designer

See the bigger picture in things that are small, the whole forest, not just the trees, then you'll be seeing it all.

Integrate rather than Segregate

Work Together

Many hands make light work.

Use Small & Slow Solutions

Keep it Simple

Reduce pain and strain with less to maintain. Taking longer can make you stronger.

Use & Value Diversity

Mix it Up

Variety is the spice of life. Widen minds with different kinds. Different flavours work in your favour.

Use Edges & Value the Marginal

Think Outside the Box

Work the interface. If it's not on the edge then it's taking up too much space.

Creatively Use & Respond to Change

Get Creative

What's for certain is that nothing's for certain. The only thing that remains the same is change.

Permaculture comes from the words 'permanent culture'.
In the face of big issues like climate change, biodiversity loss, pollution, human conflict and overconsumption, permaculture helps us to find practical solutions that we can put into action wherever we are, to improve the world in which we live.
As a worldwide movement, permaculture has inspired individuals, households and communities to move away from lifestyles of excess consumption and towards a life of giving back (which is also way more fun!).

Illustrated by Brenna Quinlan. Designed by Charlie Mgee. ⓒ 2020 Grow Do It. growdoit.com.au   Principles by David Holmgren. Icons by Richard Telford. ⓒ 2002 permacultureprinciples.com

To purchase Brenna's Permaculture; Ethics, Principles & Actions poster
(A1-size, 594 mm x 841 mm), head to **www.growdoit.com.au**

THE PLANET NEEDS **US ALL.**
TO GROW. TO CARE.
TO SHARE PERMACULTURE
EVERYWHERE.

JOIN THE MOST PRACTICAL
MOVEMENT IN THE WORLD
AND **SPEAK UP** FOR LIFE.

TEACH PERMACULTURE.

~ Morag Gamble

SCAN ME

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